On degree phrases and result clauses

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Paulien Dea Rijkhoek

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te Almelo

Promotor: prof. dr. J. Koster

Referent: dr. C.J.W. Zwart

"Just tell yourself, Duckie,
you're really quite lucky!
Some people are much more...
oh, ever so much more...
oh, muchly much-much more
unlucky than you!"

Dr. Seuss

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Chapter 1

Introduction

1.1 Degree Phrases & Result Clauses

This dissertation is concerned with phrases like *te lang* `too tall', *zo mooi* `so beautiful' or *intelligenter* `more intelligent'. They can function as small clause predicates ((1a,b,d), cf. Hoekstra 1988), but also as modifiers (1c):

(1) a Ze is lang
`She is tall'
b Ze is veel te lang
`She is much too tall'
c Ze heeft zo prachtig gezongen dat iedereen er stil van was
she has so beautifully sung that everyone there quiet of was
`She sang so beautifully that everyone was quiet'
d Die vrouw is intelligenter dan je denkt
that woman is intelligent-er than you think
`That woman is more intelligent than you think'

Such phrases are analyzed as degree phrases, in which the degree items *te* `too', *zo* `so' and *-er* `-er' function as heads that select the phrase projected by the adjective (cf. Abney 1987, Corver 1990 and the discussion in chapter 3 of this thesis). Degree items only select gradable adjectives. Zwarts (1992) assumes that a degree head is an operator that binds an argument position in the Theta-grid of the adjective. Adjectival predicates without a lexicalized degree head (as in (1a)) are assumed to have an empty degree head: *lang* `tall' in (1a) is a degree phrase, rather than a bare AP:

(2) a $[_{degp} \varnothing [_{ap}$ lang]]
b $[_{degp}$ te $[_{ap}$ lang]]
c $[_{degp}$ zo $[_{ap}$ prachtig]]
d $[_{degp}$ intelligent$_i$-er $[_{ap}$ t$_i$]]

Some degree heads cooccur with subclauses that appear to depend on the degree head, see for instance the result clause in (1c). Such dependent clauses need not be adjacent to the projection of the degree head that licences it. In chapter 5 I propose an analysis of result clause constructions like (1c) in which the subclause is base-generated in sentence-final position, independently of the projection of the degree head.

Before dealing with the major issues of this dissertation, I will sketch the theoretical framework in section 1.2 and make some remarks on terminology in section 1.3.

1.2 Framework

The most important theoretical program that is adopted in this dissertation is Kayne's (1994) antisymmetry hypothesis. Kayne proposed to project the hierarchical relations in a syntactic tree on the linear order of the end nodes (the Linear Correspondence Axiom (LCA)). To guarantee the correct (i.e. observed) left to right order of words and phrases in a sentence, the structure of a syntactic tree must be restricted.

An important consequence of the antisymmetry hypothesis is that movement to the right and right-adjunction are illegitimate options in analizing syntactic structures. This severely restricts the possible analyses of a great many constructions, among which extraposition analyses of result clauses. Chapter 5 of this thesis will provide an analysis of the sentence-final occurrence of result clauses that is consistent with the framework outlined in Kayne (1994).

Another consequence of "antisymmetric syntax" is a one-level X-bar structure, in which a head X^0 immediately projects a maximal projection XP. To this XP only one YP can adjoin, which implies that a specifier is an adjunct of XP, instead of a sister of X'. The latter implication means that adjuncts and specifiers have the same structural configuration. A specifier of X^0 is an adjunct of XP that is special, in the sense that a specifier is an adjunct that is involved in an agreement relation with the head X^0 (cf. Hoekstra 1991, Kayne 1994).

In addition to Kayne's LCA, I will adopt a minimalist view on syntax, though this is not crucial to the analyses proposed in this thesis. I will follow Zwart (1993, 1997) in assuming that a subject in Dutch subject-initial main clauses occurs in the

specifier position of AgrSP and that an object occurs in the specifier position of AgrOP.

For the analyses in this dissertation, no intricate feature checking is needed. I will assume that a specifier-head relation provides the correct configuration for matching the respective features of maximal projections and heads.

With respect to lexical insertion, I will assume that this takes place at or after Spell-Out (see for instance work by Halle & Marantz 1993). This implies that the syntactic component works with syntactical categories and features only. For example, in case the degree head is represented by a bound morpheme and selects an AP, the adjectival head moves up and adjoins to the degree head. The complex head A^0-Deg^0 is spelled out as a comparative or superlative form of the adjective when lexical insertion takes place. As we will see in chapter 3 of this dissertation, *taller* and *tallest*, but also *more*, represent an A^0-Deg^0 complex.

1.3 Terminology

As mentioned in the previous section, adjectives can be used as modifiers within or outside of noun phrases in Dutch. As prenominal modifiers they can carry schwa-inflection (cf. section 2.3.2 of chapter 2). In all other environments they are not inflected:

(3) a de meest waarschijnlijk**e** oplossing
`the most probable solution'
b Het probleem is waarschijnlijk_ al opgelost
`The problem is probably already solved'

I will use the term adjective for both cases, sometimes specifying that we are dealing with an adjective that is used adverbially. In tree diagrams, both will be indicated by AP.

In English, however, an adjective like *perfect* carries the suffix *-ly* in sentential modification:

(4) a that perfect little house
b that little house is fits our purposes perfect**ly**

I will refer to *perfect* as an adjective, or adjectival degree phrase. I will refer to the *-ly* form *perfectly* as an adverb, or an adverbial degree phrase. In trees, the two forms will be indicated by AP and AdvP, respectively.

The term *adverbial* will be used as roughly similar to the term *modifier*: it refers to prepositional phrases as well as to degree phrase adverbials.

Adverbials of different types (modal, temporal, intensifying) can modify projections of various syntactic categories. In general, adjectival degree phrases modify noun phrases and adverbial degree phrases modify anything else:

(5) a dat is een ongelooflijk mooi boek
`that is an incredibly beatiful book'

b het waarschijnlijk groene boek komt volgend jaar uit
the probably green book comes next year out
`the book, that will probably be green, will appear next year'

c zij zit diep in de put
she sits deeply in the well
`she's deeply depressed'

d dat is pijnlijk betrekkelijk
that is painfully relative
`that's painfully relative'

e de klaarblijkelijk bloedmooie roman
the apparently blood-beautiful novel
`the apparently very beautiful novel'

f de gisteren nog prachtige bloemen
the yesterday still beautiful flowers
`the flowers that were still beautiful yesterday'

g Hij is waarschijnlijk gisteren ziek geweest
he is probably yesterday ill been
`He probably was ill yesterday'

One requirement that can be set for a theory about the structural configuration of modification is that it applies uniformly across these categories. This desideratum is taken up in chapter 2.

1.4 Outline

This dissertation consists of two parts: one on degree phrases and one on result clauses.

The first part concerns (a) the structural status of degree phrase that appear as modifiers in the sentential domain and (b) the internal structure of degree phrases. Chapter 2 discusses the first issue. I consider an analysis in which adverbs are heads that select the phrase they modify as complements and argue that this analysis is incorrect. I then consider Cinque's (1997) analysis of adverbial modifiers as specifiers of functional projections and compare it to an analysis in which they are not specifiers but adjuncts. The difference between specifiers and adjuncts is not structural: they share the same structural configuration of adjunction to a maximal projection. A specifier, however, is a special type of adjunct that is in agreement with the head of the projection it is adjoined to (cf. Hoekstra 1990 and Kayne 1994). Comparing the two types of analysis, my conclusion will be that degree phrases which function as modifiers are preferrably analyzed as adjuncts without any agreement relationship with the head of the projection they adjoin to.

Chapter 3 discusses the second issue of the first part of this dissertation: the internal structure of degree phrases. Following Abney (1987) and Corver (1990), I assume that *te mooi* `too beautiful' and *mooier* `more beautiful' are degree phrases, consisting of a degree head (e.g. *te*) with an adjectival complement (the AP *mooi*). Corver (1994, 1997) argues convincingly that a degree head like *too* does not have the same structural status as the comparative element *more*. He presents a set of very interesting data, showing that the group of items that were all analyzed as degree heads in Abney (1987) and Corver (1990), in fact consists of two subgroups. Some of these items (such as *too*) cooccur with *much*, whereas others (such as *more*) do not. I argue that the interpretation that Corver provides for these differences in syntactic behavior is incorrect. In the last part of chapter 3 I present an alternative analysis of these data, arriving at the conclusion that *too* (and *so*, and *as*, etc.) is indeed a degree head, whereas *more* (and *less* and *most*, etc.) is a degree phrase that consists of a comparative degree morpheme and an incorporated adjectival quantifier.

The second part of this dissertation deals with result clauses like the one in (2) below. The observation that a result clause depends on a degree element, yet is not obligatorily adjacent to it, raises the question whether the degree phrase

and the result clause are generated in adjacent positions within the same projection and if so, which one is moved:

(6) Janna heeft al zoveel boeken over quilten gekregen dat we nu maar een boek over borduren voor haar kopen.
Janna has already so-many books about quilting got that we now but a book about embroidery for her buy
`Janna has got so many books about quilting that we will buy her a book about embroidery this time'

Chapter 4 starts off with a number of earlier analyses of result clause constructions. At the end of that chapter I conclude that result clauses are not generated inside the projection of the degree head *zo* `so'. This conclusion sets the scene for my analysis of result clauses, which is presented in chapter 5. In this chapter, I show that coordination, comparatives, noun phrases with relative clauses and result clause constructions show striking similarities in their distribution and other aspects of syntactic behavior. In light of these similarities, I adopt an X-bar analysis of conjunction which embraces both coordinating and subordinating constructions. In this analysis, a result clause is conjoined with the matrix clause or with part of the matrix clause. Chapter 5 shows how this analysis accounts for several properties of the construction at issue. Additional firm support for the conjunction analysis of result clauses is presented in chapter 6. This chapter shows that the analysis correctly accounts for word order phenomena in Frisian result clauses and provides a discussion of negative polarity items like *ook maar* `even', which can occur in a result clause while being licensed by negation in the matrix clause.

Chapter 7 summarizes the argumentation and conclusions of this thesis on degree phrases and result clauses.

Chapter 2

Degree Phrases

part I

Specifiers or Adjuncts

2.1 Introduction

Degree phrases appear as small clause predicates (1a), as modifiers within the nominal domain (1b) or as modifiers outside of the nominal domain (1c):[1]

(1) a Die glazen vaas is [kwetsbaar]
`that glass vase is fragile'
b Janna heeft [[langer] haar]
`Janna has longer hair'
c Janna heeft [zo hard] gelopen (dat Peter haar niet bij kon houden)
Janna has so fast walked that Peter her not at could keep
`Janna ran so fast that Peter could not keep up with her'

It is the third case, modification outside of the nominal domain, that is the subject of this chapter. Since a fully developed theory of adverbial modification is too large an issue to be dealt with in a single chapter, I would like to restrict myself to the question whether degree phrase adverbials should be analyzed as specifiers (of functional projections) or as adjuncts.[2]

The traditional view on adverbials is that they are adjuncts, adjoined to, for instance, the verb phrase (e.g. Pollock 1989). However, in recent years some

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[1] See the introductory chapter for the assumption that gradable adjectives gave a G argument that has to be bound by a degree operator (Zwarts 1992): a adjectival predicate like *kwetsbaar* `fragile' in (1) is analysed as a degree phrase with an empty degree head:
(i) $[_{degp} \varnothing [_{ap}$ kwetsbaar]]

[2] I will use the term *adverbial* as roughly similar to *modifier* (to the exclusion of prenominal modifiers). That is, it does not only refer to adverbs per se, but also to prepositional phrases that occur as modifiers.

proposals have been put forward to consider adverbials (more precisely, adverbs like *probably* or *quickly*) as heads or as specifiers.[3,4]

Travis (1988) argued that an account of the distribution of adverbs should be based on an answer to the question of how their occurrence is licensed. In answer to this requirement, she developed an analysis in which adverbs are heads that are licensed by features of a verb or of inflection.

Sportiche (1994) argued that an adverb like *lentement* `slowly' in French does project an adverb phrase, but that it features as a head in the range of functional heads above the verb phrase. I will discuss Sportiche's proposal in section 2.2 below.

Laenzlinger (1993), Alexiadou (1994) and Cinque (1997) argued that adverbials are specifiers. In a theory in which specifiers and adjuncts have the same structural status, it does not seem to matter whether adverbials are analyzed as adjuncts or as specifiers. *Seem* is the correct verb, however, since there is still a distinction between adjuncts and specifiers in the sense that specifiers are those adjuncts that are involved in an agreement relation with the projecting head (Hoekstra 1991 (p.24), Kayne 1994). This agreement relationship restricts the distribution of specifiers to certain functional projections, which yields considerable differences in the predictions made by the two hypotheses. I will discuss the specifier and adjunct analyses in sections 2.3 and 2.4. My conclusion will be that adverbials are adjuncts.

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[3] In exceptional cases, adverb phrases appear as complements to a verb. One example of a verb selecting an adverb phrase is *behave*:

(i) Cats behave *(well) when they think their owner cannot see them

Alexiadou (1994, p.6) provides the following examples of what she terms complement-type adverb(ial)s:

(ii) a He behaved *(awfully)
b John goes *(to London)
c John resides *(in Berlin)

Alexiadou proposes that complement-type adverbials move to the specifier position of a functional head to be formally licensed, whereas specifier-type adverbials (the modifiers I consider) are generated in specifier positions to be functionally licensed.

[4] Tim Stowell (pc) notes that there is yet another alternative: adverbs can select the phrase they modify as specifiers. In that case, the adverb is a predicate and the phrase it modifiers is its argument. An approach like that does not have the disadvantages of an analysis in which an adverb selects the phrase it modifies as a complement (cf. section 2.2.2). Moreover, it meets the advantages of the adjunct analysis that will be defended here. A full discussion of the ins and outs of such an analysis, however, will be left for future work.

2.2 Modifiers as heads in the functional structure of a sentence

Travis (1988) proposed that an adverb like *probably* features as a head in syntax. She proposed that adverbs are deficient in the sense that they do not project a full phrase. Instead, they are licensed as bare heads within the IP or VP projection. The specific licensing relationships (via features of $Infl^0$ and V^0) are designed to explain the alleged differences in distribution between adverbs and prepositional phrases that modify (part of) a sentence.

There is a rather straightforward counterargument to Travis' claim that adverbs do not project (cf. Rijkhoek 1994). A first indication is that they can be modified (cf. (2)). A second indication is that some adverbs seem to have prepositional complements (cf. (3)).[5]

(2) a He painted it *[incredibly fast]*
b Hij eet *[bijna nooit]* zijn bord leeg
he eats almost never his plate empty
`He almost never finishes his plate'

(3) Her friend picked the exact same colour, *[quite independently of her own choice]*

If adverbs are indeed bare heads, we do not expect them to be modified. In the same vein, a head that selects a complement must project to accommodate it as a sister. As such, Travis' main hypothesis is easily falsified and I will not discuss her proposal any further here.

A different view on adverbs in which they feature primarily as heads, is proposed by Sportiche (1994). In his system, an adverb like *lentement* `slowly' does project, but it takes the phrase it modifies as its complement. That is, the adverb features as one of the heads in the functional domain of the verb. An approach like this is worth considering, because it mirrors analyses with respect to adjectival modification in the nominal domain (cf. Abney 1987, Barbiers 1992). After briefly looking at modication of noun phrases in section 2.2.1, I will discuss Sportiche's proposal in section 2.2.2.

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[5] In addition, the distribution of adverbs is not as different from that of prepositional modifiers as Travis (1984) claims.

2.2.1 Adjectival modifiers in the nominal domain

In the nominal domain, there is a lively debate going on about the structural status of adjectival modifiers.[6] The traditional analysis is to assume that adjective phrases are generated within the NP (e.g. Jackendoff 1977). Since Abney (1987), other analyses view them as "the auxiliaries in the noun phrase" (Barbiers 1992), in the sense that they range among the functional heads in the extended domain of the noun phrase. An intermediate analysis is provided by Menuzzi (1994), in which he supports Bernstein's (1991) conclusions that we should recognize some adjectival modifiers as adjuncts to functional projections and some as heads in the extended nominal projection.

In Dutch, prenominal adjectives carry a schwa-suffix if the determiner is [+Definite], if the noun is [-Neuter] or if the noun is [+Plural]. In other cases, there is no schwa-ending:[7]

(4)	a	een klein_ boek *a small book*	[-definite, +neuter, -plural]
	b	het klein**e** boek *the small boek*	[+definite, +neuter, -plural]
	c	klein**e** boeken *small books*	[-definite, +neuter, +plural]
	d	een klein**e** man *a small man*	[-definite, -neuter, -plural]
	e	de klein**e** man	[+definite, -neuter, -plural]

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6 For a more extensive overview than can be given here, see Kester (1996, pp.30-50).

7 Van Riemsdijk (1991) provides interesting data involving prenominal modification. He notes that the SCHWA-inflection on a prenominal modifier must be adjacent to the noun. This prevends preposition phrases selected by an adjective to appear in between the adjective and the noun:

(i) a de man is [trots op zijn zoon]
the man is proud of his son
b * de [trots op zijn zoon] man
the proud of his son man
c de op zijn zoon trotse man
the of his son proud-SCHWA man

Interestingly, constructions like *zo snel mogelijk* `as fast as possible' are allowed in prenominal modification. In that case, *mogelijk* `possible' carries the inflection:

(ii) a een zo snel mogelijk vliegtuig
a so fast possible airplane
b een zo snel mogelijk**e** auto
a so fast possible_SCHWA car

Corver (1994, 1997) also considers examples like (i) and (ii). Since prenominal modification is not a topic that is dealt with in this thesis, I will not discuss their analyses here (but see chapter 3 in this book for discussion of other aspects of Corver 1994, 1997).

the small man

f klein**e** mannen [-definite, -neuter, +plural]
small men

Barbiers (1992) argues that adjectives are part of the functional domain of the noun phrase. His main argument against adjective phrases as adjuncts is that the inflection on prenominal adjectival modifiers is hard to explain in an adjunct approach. If adjectives are part of the functional structure in a noun phrase, however, movement of the noun (or of a *pro* that is associated with the noun) allows for checking of the relevant determiner and noun features in specifier-head configurations. The agreement phenomenon between adjectives and nouns thus appears to provide a strong case for an adjective phrase as a functional projection within the extended projection of a noun.

However, Barbiers' (1992) conclusion that adjectives are not adjuncts but provide a functional projection in the noun phrase is modified somewhat by Menuzzi (1994). Menuzzi provides support for and extends Bernstein's (1991) analysis, on the basis of Dutch and Brazilian Portuguese. Bernstein concluded that while some adjective phrases indeed have the status of a functional projection within the extended noun phrase, others appear to be specifiers or adjuncts after all. Adjectives that appear as heads in the functional structure of a noun phrase are those that block movement of a suffix that is claimed to be generated in N^0, yielding the order A-N (the (b) examples below). Adjectives that are a specifier of the NP, or an adjunct, do not block movement of the noun, yielding the order N-A (the (a) examples below). In Spanish, both types are available (cf. Bernstein 1991):

(5) a un hombre simple
a man simple-minded
b un simple hombre
`a mere man'
c un**o** simple
`a simple-minded/ *mere (one)'

(6) a un autor grande
`a big (in size) author'
b un grande autor
`a great author'
c un**o** grande
`a big/ *great one'

(7) a * un accidente mero
b un mero accidente
`a mere accident'
c * un**o** mero

In Spanish, adjectives that obligatorily precede the verb (cf. *mero* in (7)) block movement of a nominal clitic *-o* that is, by assumption, raised from the position of N^0: they are analyzed as heads in the functional projection of the noun. In contrast, adjectives that can occur after the noun as well do not block movement of the clitic from N^0 to D^0 (cf. (5c) and (6c)): they are analyzed as adjuncts (cf. Bernstein 1991 and Menuzzi 1994).

For Dutch, Menuzzi arrives at analysis in which there are three positions for adjectives. One ranges among the functional heads, one is an adjunct of the NP and one is the specifier position of the NP (cf. Menuzzi 1994 for discussion).

In short, although some people argue that adjectival modifiers in a noun phrase are heads in the functional domain, others argue that modifiers can be functional heads in some cases, but can also be adjoined to the noun phrase. What is important to keep in mind is that the head status of particular adjectives (e.g. Spanish prenominal ones in Bernstein 1991) is inferred from the fact that they appear to block the nominal head from moving across their position, yielding the order adjective-noun.

There is another structural option for prenominal adjectives: they can be specifiers of functional projections in the nominal domain, as Cinque (1993) proposed. This is the analysis adopted by Kester (1996), whose central topic is adjectival inflection. She adopts Cinque's specifier hypothesis because it is the least problematic analysis of prenominal adjectives that is still able to account for inflection patterns in a natural way.[8] Her main objection to an adjunction theory of prenominal adjectives is the same objection that was expressed by Barbiers (1992): an adjunction theory cannot easily account for the agreement between determiner, noun and adjective as manifested in adjectival inflection (cf. Barbiers 1992 as well).

Indeed, the issue of how to account for adjectival inflection is a major argument in favour of the specifier approach for adjectives in the nominal domain. Unfortunately, there is no such decisive factor in the discussion about whether

[8] Another example of an analysis in which prenominal adjectives are considered to be the specifier of a functional (agreement) projection within the noun phrase is Lattewitz (1997).

adverbials are specifiers of adjuncts. Section 2.4 compares a specifier and adjunction analysis for adverbials.

First, however, consider a proposal to consider adverbs as heads in the functional structure of a clause.

Sportiche 2.2.1 1994

As mentioned in the introduction to section 2.2, Sportiche (1994) analyses adjectival degree phrases like *lentement* `slowly' in (8) as heads in the functional domain of a clause:

(8) a Marie avait [lentement] mangé sa soupe
Marie has (very) slowly eaten her soup
`Marie ate her soup slowly'
b Marie avait [$_{advp}$ lentement [$_{vp}$ mangé sa soupe]]

That is to say, the adverb takes its modifiee as complement: I will refer to this hypothesis as the head approach.

An advantage of Sportiche's (1994) proposal is that it makes a syntactic theory without adjuncts conceivable. That is to say, if modifiers are no longer adjuncts, base-generated adjunction can be dispensed with. In addition, Sportiche (1992) argued that all movements (of XPs) take place without adjunction as well. That is, all movements can be argued not to involve adjunction, but rather substitution into a specifier position of a particular head. This implies that adjunction as a result of movement can be dispensed with as well. Put together, these two analyses give rise to a theory in which no adjunction to XP whatsoever is needed.

A theory without adjunction is more restrictive than a theory that does include the option to adjoin to a maximal projection. When there are no restrictions on adjunction whatsoever, the theory provides an indefinite set of positions for maximal projections. For example, maximal projections usually have just one specifier position, but if adjunction is unrestricted, it allows for numerous adjuncts to a single maximal projection. In other words, unrestricted adjunction yields a huge overgeneration of possible XP sites. A theory in which adjunction is *a priori* excluded, however, only allows for specifiers. This yields a theory that is more

restricted than one that does allow for adjunction (well, provided that there are restrictions on the number of specifiers).[9]

Since Sportiche (1994) analyzed modifiers as part of the functional structure of a clause, he paves the way for a theory in which adjunction is not a necessary configuration anymore. In this respect, Sportiche's proposal is very interesting.

However, it also makes a number of incorrect predictions. This section will present these incorrect predictions and provide counterarguments for the hypothesis that adverbs are heads that select their modifiee.[10]

Sportiche's (1994) analysis is inspired by the following contrast:

(9) a Marie avait [(très) lentement]/ *[d'une manière très lente] mangé sa soupe
Marie has (very) slowly/ of-a manner very slow eaten her soup
`Marie ate her soup slowly/ in a slow manner'
b Marie avait mangé sa soupe [(très) lentement]/ [d'une manière très lente]

As we see in the (9a) example, a prepositional modifier cannot precede the main verb, in contrast to an adverb phrase. Example (9b) shows that modifiers of both syntactic categories can occur after the main verb and its object.

Sportiche argues that the difference in distribution between a prepositional phrase and an adverbial degree phrase modifier is unexpected if both are adjuncts. In addition, he adopts Zubizarreta's (1982) idea that adjuncts assign an "adjunct thematic role" to the phrase they are adjoined to. To achieve maximum generality in assumptions about theta-role assignment, Sportiche proposes to assume that adverbial and prepositional heads (as well as e.g. verbs) assign their thematic roles inside their own maximal projection, to a complement or a specifier.

If so, the difference between (9a) and (9b) above can be explained as follows. An adverb like *lentement* `slowly' can assign a thematic role both to its specifier and to its complement: both *lentement mangé sa soupe* and *mangé sa soupe lentement* are grammatical and have the structure in (10a) and (10b) below.

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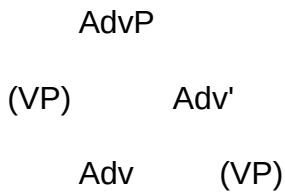
[9] Chomsky (1995) allows for multiple specifiers. See Zwart (1997b) for a critical discussion of this hypothesis.

[10] In section 2.4 we will see that adverbials can also be thought of as specifiers (of functional projections). At first sight, the specifier approach has the same advantage of doing away with (base-generated) adjunction, without the disadvantages of the head approach.

A prepositional modifier, however, is a more complex phrase, in which the complement position is already taken by the noun phrase. Therefore, at least in a theory which assumes strict binary branching, a preposition can only assign an "adjunct" thematic role to its specifier position. The structures proposed by Sportiche (1994, p.54) are given in (10):

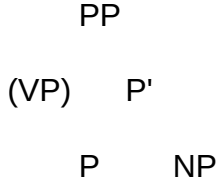
(10) a avait [$_{advp}$ [lentement [$_{vp}$ mangé sa soupe]]]
has slowly eaten her soupe
b avait [$_{advp}$ [$_{vp}$ mangé sa soupe] [lentement]]

c



(11) a avait [$_{pp}$ [$_{vp}$ mangé sa soupe] [$_{p'}$ de [$_{np}$ une manière lente]]]
has eaten her soupe of-a manner slow
b * avait [$_{pp}$ _ [$_{p'}$ de [$_{np}$ une manière lente] [$_{vp}$ mangé sa soupe]]]

c



The next subsection will show that Sportiche's analysis of French does not work out correctly for Dutch.

2.2.2.1 Dutch

If we assume that Sportiche's proposal is correct, we predict that adverbs or adjectives with a prepositional complement can occur after their modifiee only, exactly as in (11) above. That is to say, the modifiee must be the specifier of the degree phrase, because the complement position in the AP is already occupied by the PP. This prediction is not borne out in Dutch:

(12) a Janna en haar buurvrouw hebben **onafhankelijk van elkaar** dezelfde quilt ontworpen
Janna and her neighbour have independently of each-other the-same quilt designed
`Janna and her neighbour designed the same quilt, independently of each other'
b * Janna en haar buurvrouw hebben dezelfde quilt ontworpen **onafhankelijk van elkaar**

The (12b) example is ungrammatical, which is not predicted by Sportiche's hypothesis. However, in Dutch an adjectival degree phrase cannot occur in a position after the main verb participle at all, which implies that the ungrammaticality of (12b) is an issue independent of Sportiche's analysis:

(13) a Janna en haar buurvrouw hebben hun quilts (goed) ontworpen (*goed)
Janna and her neighbour have their quilts well designed well
`Janna and her neighbour designed their quilts well'
b Janna heeft (snel) de deur geverfd (*snel)
Janna has quickly the door painted quickly
`Janna painted the door quickly'

In contrast, however, example (12a) is predicted by Sportiche's hypotheses to be ungrammatical: again, contrary to fact.[11] His proposal, then, makes incorrect predictions for Dutch adjectival modifiers that have a PP complement.

The next subsections will present additional arguments against a head approach to adjectives or adverbs in the sentential domain.

2.2.2.2 No HMC effects

Another argument against the hypothesis that an adverbial ranges among the functional projections in a clause, is that there do not seem to be head movement effects in which a verb cannot cross an adverb (cf. Cinque 1997, p.2). Consider the examples in (14a) en (14b). As we see in (14a), the base position of the finite verb *zou* `would' is lower than that of the adverbial *graag* `gladly'. In the (14b) example the finite verb is moved to the front of the clause (V2), a movement that appears not to be blocked by the presence of an adverb:

---

[11] Note that the order in the English translation of (12) does correspond to the prediction that adverbs with a prepositional complement occur after their modifiee.

(14) a ... dat Janna die film (graag) zou willen zien
... that Janna that movie gladly would want see
`... that Janna would (very much) like to see that movie'
b Janna zou$_i$ die film (graag) t$_i$ willen zien
Janna would that movie gladly want see
`Janna would (very much) like to see that movie'

In the previous section we saw that an adjective was assigned head status because of an apparent violation of the Head Movement Constraint (HMC). Recall that in the nominal domain, the main argument to consider (at least some) adjectives as functional heads was the observation that they seem to block movement of the noun across their position yielding an adjective-noun order. As such, the absence of HMC violations in the clausal domain contrasts with the nominal domain.

If the adverb in (14) is indeed a functional head, the grammaticality of the (14b) example is unexpected when the adverb is present. If the adverb *graag* `gladly' is indeed a head selecting (for instance) a VP, the HMC predicts that the verb cannot move past the adverb (unless it would adjoin to the adverb and then move on, which is implausible).

The unexpected grammaticality of (14b) above can be taken to suggest that adverbs are not heads selecting their modifiee.[12] This conclusion is corroborated in the next subsections, which also indicate that the head approach to adverbs is incorrect.

2.2.2.3 Adverbs can be topicalized or focused

The second argument against the position that adverbs are heads is that some adverbs can be topicalized or moved for focus reasons (Cinque 1997, p.2):[13]

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[12] Alternatively, the unexpected grammaticality of (14b) could indicate that there is no HMC. On the other hand, it has been suggested by Roberts (1991) that there could be heads in the functional domain of a verb that are irrelevant for its movement up the tree. We could analyse adverbs as heads that can be skipped by verb-movement. If that is the case, adverbs can be heads in the functional structure of a clause without blocking verb movement. Then, the grammaticality of (14b) is unproblematic.

As a third option, the grammaticality of (14b) could also mean that verbs are not involved in head movement, but move within their VP (after the VP has been emptied by subject and object movement). For work assuming this type of VP movement see Koopman and Szabolcsi (1998).

[13] In addition, adverbials can be stacked (probably coordinated) and occur in front of a clause:
(i) Gisteren om acht uur, bibberend, met haar natte jas nog aan, stond ze voor de deur.
yesterday at eight hour, shaking, with her wet coat still on, stood she before the door

(15) a **Snel** greep Janna het boek[14]
quickly grabbed Janna the book
`Quickly, Janna grabbed the book'
b **Waarschijnlijk** was het anders op de grond gevallen
probably was it otherwise on the floor fallen
`Otherwise it had probably fallen to the floor'
c **Gisteren** waren de kaarsen ook al van tafel verdwenen
yesterday were the candles also PRT from table disappeared
`Yesterday the candles had also disappeared from the table'
d **Genoeglijk** zat de kat ernaast
glumly sat the cat there-next
`The cat was sitting glumly next to it'

These operations are generally considered to be available only to maximal projections and not to heads. This indicates that the adjectives like *waarschijnlijk* `probable' indeed project a full (degree) phrase that is not a part of the functional structure of the sentence.

It should be noted that this argument against the head approach also depends on the exact theoretical framework one adopts. For instance, in Chomsky's (1995) bare phrase structure theory items can be heads and maximal projections at the same time. If this were to apply to adverbs, then they can be merged as heads with the phrase they modify (as in the head approach we are considering now) and still undergo movement to a focus or topicalization position that is considered to be a position for a maximal projection.

In addition, note that there is a small set of modificational elements that cannot be topicalized on their own. In Dutch, *al* `already' and *niet* `not' are members of that set:

(16) a Het boek is **al** op de grond gevallen
the book is already on the floor fallen
`The book already fell to the floor'
b * **Al** is het boek gevallen[15]
already is the book fallen

---

[14] Recall from chapter 1 that although *snel* `quick(ly)' appears to be just a bare adjective, it is analysed as a degree phrase (an adjectival degree phrase, to be precise) with an empty degree head.

[15] *Al* in Dutch can also express a meaning similar to that of *though*:
(i) Al is het boek op de grond gevallen, dat betekent niet dat je er over heen mag lopen
though is the book on the floor fallen that means not that you there over PRT may walk
`Though the book fell to the floor, that does not mean that you are allowed to walk over it'
This is not the intended meaning here.

(17) a Het boek is **niet** gevallen
the book is not fallen
`The book didn't fall down'
b * **Niet** is het boek gevallen
not is the book fallen

These elements might be heads to judge from this topicalization test, but their syntactic and semantic behaviour is much too intricate to allow for such a rash conclusion. A full discussion of these elements is outside the scope of this thesis. I refer the reader to De Mey (19??) and Barbiers (1995, chapter 3) for discussion.

2.2.2.4 Adverbs that select prepositional phrases

Another argument against adverbs as head in the functional domain of a clause that select their modifiee, concerns those adjectives and adverbs that have a PP-complement. Adverbs like *independently* are combined with a fixed preposition (viz. *independently of XP*).

If we assume that on the one hand, the accompanying prepositional phrase is a complement of the adverb (or the adjective, in: *independent of XP*) and that, on the other hand, the adverb selects its modifiee, then we are actually assuming that the adverb has two arguments.

Of course, a head selecting two arguments is not unique or undesirable in itself: there are many verbs as well that have more than one argument. The problem is which structural configuration has to be assigned to such cases.

In the remainder of this section I will show that an analysis assuming that an adverb with a PP complement has its modifiee as complement as well, runs into structural problems.

Consider a sentence like the following:

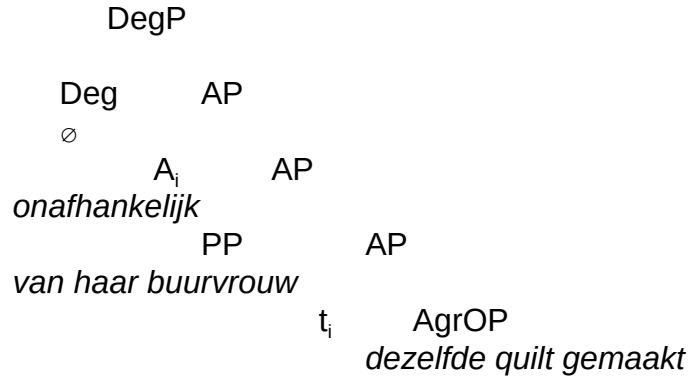
(18) Janna heeft [onafhankelijk [van haar buurvrouw]] dezelfde quilt gemaakt
Janna has independently of her neighbour the-same quilt made
`Janna made the same quilt, independently of her neighbour'

If we assume that *dezelfde quilt* `the same quilt' is in the specifier position of AgrOP, the adverb is structurally higher than at least AgrOP (its exact position is unimportant at this point). Let us assume that the adjective *onafhankelijk*

`independently' (used adverbially) selects AgrOP. What matters here is how to express the argument status of both the PP and AgrOP structurally.

Considering the configuration proposed for verbs with more than one argument, a structure that comes to mind is one along the lines of a Larsonian verb phrase (cf. Larson 1988). That is, the adjective originates as sister to its lowest complement (viz. AgrOP) and moves up to a higher head position in the adverb phrase to license the prepositional argument (or for any other reason):[16]

(19) *Janna heeft ...*



The first problem we run into is that this structure in itself does not allow topicalization of the adjective and the preposition phrase together. However, such examples are perfectly grammatical:

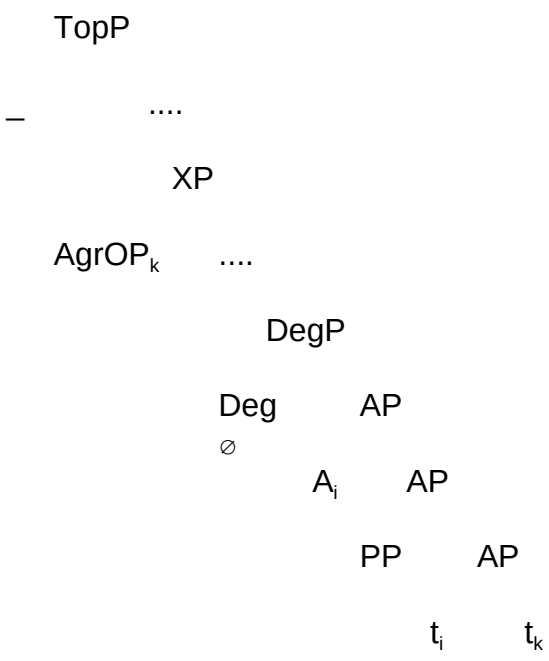
(20) [Onafhankelijk van haar buurvrouw] heeft Janna dezelfde quilt gemaakt
independently of her neighbour has Janna the-same quilt made

To allow for such topicalization examples, at least the AgrOP must be moved to a projection higher than position of the adjective (say XP), after which the DegP (including the AgrOP-trace) can be topicalized:

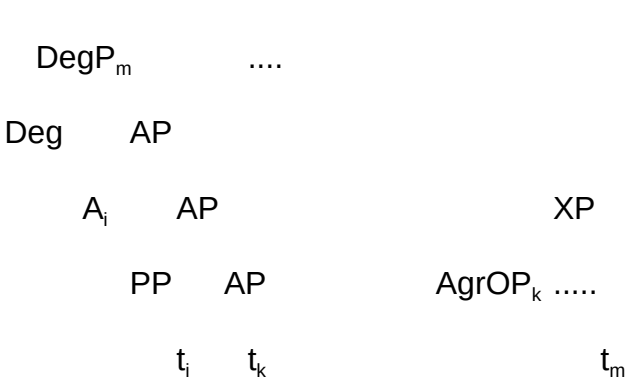
---

16 Other adverbs can intervene between the prepositional phrase and the direct object:
(i) Janna heeft onafhankelijk van haar buurvrouw **steeds** dezelfde quilts gemaakt
Janna has independently of her neighbour continuously the-same quilts made
`Independently of her neighbour, Janna always made the same quilts'
This is not a problem for the Larson-style structure in the main text, because it is not set that the adverb always selects AgrOP, as is assumed for the sake of illustration in (19). The core assumption is that the adverb selects what it modifies, which may also include other modifiers. Thus, the lowest XP in the extended adverb phrase in (i) would simply be a structurally higher one than AgrOP, since it would include a position for the adverb *steeds*.

(21)



(22)



However, it is unclear where the AgrOP should move and what the trigger for such movements could be.

In addition, there is no obvious reason why the AgrOP should move in this fashion in some cases (i.e. in examples involving topicalization of the adjective plus the PP) but not in other cases (i.e. when the adjective plus the PP are not moved together and movement of AgrOP could lead to ungrammaticality).

In short, an analysis in which adverbs select their modifiee runs into structural problems as soon as PP complements are involved.

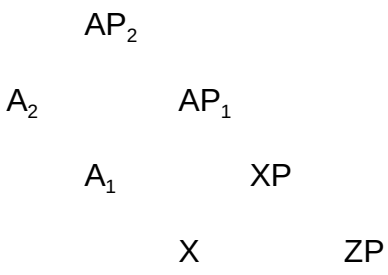
Another drawback of the head approach to adverbs is that we loose the structural distinction between selection and modification. In the next subsection I will argue that such a structural distinction between modification and selection

is needed nevertheless. This will also provide another argument against the AP in Larson-style above, and a less theory-internal one at that.

2.2.2.5 Structural distinction between modification and selection necessary

The fourth problem with adverbs as heads selecting the phrase they modify is that this approach does not allow for a structural distinction between those modifying part of a clause and those modifying other adverbs that modify part of a clause. That is to say, if adverbs select the phrase they modify as their complement, an adverb modifying another adverb will have to select the latter as its complement. As such, in the following structure, $adverb_2$ can be a modifier of $adverb_1$:

(23) ...



What is important to consider, however, is that if $adverb_2$ were modifying everything under the AP_1-node (i.e. that part of the sentence that includes $adverb_1$ and XP (or whatever $adverb_1$ is modifying)), we would get the exact same structure.[17]

In other words, the structure above is ambiguous between $adverb_2$ modifying $adverb_1$ and $adverb_2$ modifying a larger part of a clause. This implies that sentences in which two adverbials appear in the above configuration should be ambiguous. *Waarschijnlijk* `probably' is an adjectival degree phrase that can be a modifier both at a phrasal and at a clausal level:

(24) Janna heeft waarschijnlijk snel dat boek uitgelezen
Janna has probably quickly that book out-read
`Janna probably quickly finished that book'

---

[17] See (28) and (29) below for the structures that I believe are correct.

Indeed, (24) seems to have two readings: either *waarschijnlijk* modifies *snel*, or it modifies the proposition that Janna read the book quickly.

However, when the two readings are teased apart, as in (25)-(27), absence of a structural distinction between modification and selection makes incorrect predictions with respect to extraction possibilities.

Consider the following examples:

(25) a Janna heeft gisteren snel dat boek uitgelezen
Janna has yesterday quickly that book out-read
`Janna quickly finished that book yesterday'

b Janna heeft ongelooflijk snel dat boek uitgelezen
Janna has incredibly quickly that book out-read
`Janna has finished that book incredibly fast'

c * Janna heeft ongelooflijk dat boek uitgelezen
Janna has incredibly that book out-read
`Janna has incredibly finished that book'

In (25a), *gisteren* `yesterday' cannot be a modifier of the adverbial degree phrase *snel* `quickly'. In (25b), *ongelooflijk* `incredibly' must be a modifier of *snel*, since it cannot modify any other part of the clause (cf. (25c)). If there were no structural difference between the two sentences in (25a-b), we would expect the extraction possibilities to be the same in both cases. The next paradigm shows that this is not the case:

(26) a Gisteren$_i$ heeft Janna t_i snel dat boek uitgelezen
yesterday has Janna _ quickly that book out-read
`Yesterday Janna quickly finished that book'

b * [Gisteren snel]$_i$ heeft Janna t_i dat boek uitgelezen
yesterday quickly has Janna _ that book out-read
`Yesterday quickly Janna finished the book'

c [Snel dat boek uitgelezen]$_i$ had ze gisteren nog niet t_i !
quickly that book out-read has she yesterday yet not
`Finished the book quickly, that's what she didn't do yet yesterday!'

(27) a * Ongelooflijk$_i$ heeft Janna t$_i$ snel dat boek uitgelezen
incredibly has Janna _ quickly that book out-read
* `Incredibly Janna quickly finished the book'[18]

b [Ongelooflijk snel]$_i$ heeft Janna t$_i$ dat boek uitgelezen
incredibly quickly has Janna _ that book out-read
`Incredibly quickly Janna finished the book'

c * [Snel dat boek uitgelezen]$_i$ heeft ze ongelooflijk t$_i$!
quickly that book out-read has she incredibly _
* `Finished the book quickly, that's what she did incredibly'

In fact, the paradigm shows extraction patterns that are exactly opposite to what we expect. Whichever extraction yields grammaticality for (25a) does not for (25b) and vice versa. This is clear evidence that the examples in (25a-b) involve different structures.

In sum, we do need a structural distinction between selection and modification. Therefore, adverbs are not heads that select the phrase that they modify as complements.

2.2.2.6 Summary

In this section I discussed the head approach to modification, in which adverbs (or adjectives in Dutch) are considered to be heads that are sister to the phrase they modify. A number of counterarguments were presented.

For one, there are no Head Movement Constraint effects for verb movement, which is unexpected if the adverbs are indeed intervening heads.

Second, adverbials like *snel* `quickly' can be topicalized or focused, which is usually applicable to maximal projections only and hence unexpected if adverbs are heads projecting a full phrase in between other functional heads.

Third, some adjectives (and corresponding adverbial forms) select prepositional complements, which entails that they would have two complements if they also select their modifiee. To allow for this structurally, several additional assumptions are needed, rendering the head approach less restrictive than other theories.

---

[18] It should be noted here that the intended meaning is not:
(i) Incredibly, Janna quickly finished the book

The fourth problem with the head approach is that it does not allow for a structural distinction between modification and selection, since both modification and selection will be expressed by a head-complement relation. Section 2.2.2.5 showed that abandoning the structural distinction between modification and selection leads to incorrect predictions with respect to extractibility of modifiers.

I conclude that adverbs do not appear in syntax as heads selecting their modifiee.

2.3 Specifier or adjunct

As noted in the beginning of section 2.2, Travis (1988) argued that the key to the structural configuration of modification by adverbs lies in the answer to the question how adverbial modifiers are licensed. One answer to this question is to treat adverbs as specifiers, a position that is argued for by Laenzlinger (1993), Alexiadou (1994) and Cinque (1997). In Alexiadou's words: "adverbs are licensed as Specifiers of functional projections by the relevant feature of a head. This presupposes that adverbs have certain features that would enable them to enter an agreement relation with a head and that adverbs are maximal projections. Adverbs are subject to the same requirement as arguments that only one of each type can occur in a syntactical representation." (ibid., p.19).

In chapter 1 I assumed an antisymmetric framework for this thesis (cf. Kayne 1994). This means that there is no X'-level in between heads and maximal projections: Kayne (1994) (and Hoekstra 1991 as well) argues for a one-level X-bar system. This implies that specifiers will be structurally identical to adjuncts, since both are sisters of a maximal projection. Hoekstra (1991) defines a specifier as "an adjunct which agrees with a head" (p.24). That is to say, adjuncts and specifiers have the same structural status, but they are still distinguished on the basis of whether or not they are involved in a local relation with the head X^0 of the phrase they are adjoined to. Now if we assume that adverbials (which traditionally have adjunct-status) are involved in spec-head relationships as well, no distinction between adjuncts and specifiers is left.

As such, it seems superfluous to distinguish a theory of adverbials as adjuncts from a theory of adverbials as specifiers. However, if specifiers are those adjuncts that agree with a head, it is clear that they do not have the exact same status as adjuncts, even if their structural status is identical.

Hence, the main hypothesis that degree phrases are specifiers leads to patterns in syntactic theory that differ from the patterns that originate in the hypothesis that they are adjuncts (which do not agree with the head of a projection). This is the reason these two approaches are distinguished from each other and discussed in this thesis. Section 2.4 will compare the two types of analysis, where Cinque's (1997) analysis is taken to exemplify the specifier type.

2.3.1 Structural distinction between selection and modification guaranteed

An advantage of both the adjunct and the specifier approach concerns the structural distinction between modification and selection. In subsection 2.2.2.5 above I argued that such a structural distinction cannot be dispensed with.

Recall that specifiers and adjuncts in this thesis appear in the same structural configuration. If modification is expressed by an adjunction structure, we can make a clear structural distinction between adverbs modifying other adverbs and adverbs modifying larger parts of a clause including another adverb. The former would have the structure in (28), the latter the structure in (29):[19]

---

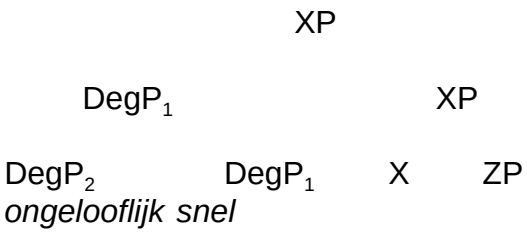
[19] I assume that *gisteren* `yesterday' represents a prepositional phrase with a lexically empty preposition. This assumption is based on the following paradigm:

(i)	a	voor acht uur	before eight o'clock
		om acht uur	at eight o'clock
		na acht uur	after eight o'clock
	b	voor woensdag	before Wednesday
		op woensdag	on Wednesday
		na woensdag	after Wednesday
	c	voor komende woensdag	before next Wednesday
		(*op) komende woensdag	(*on) next Wednesday
		na komende woensdag	after next Wednesday
	d	voor gisteren	before yesterday
		(*op) gisteren	(*on) yesterday
		na gisteren	after yesterday
	e	voor morgen	before tomorrow
		(*op) morgen	(*on) tomorrow
		na morgen	after tomorrow

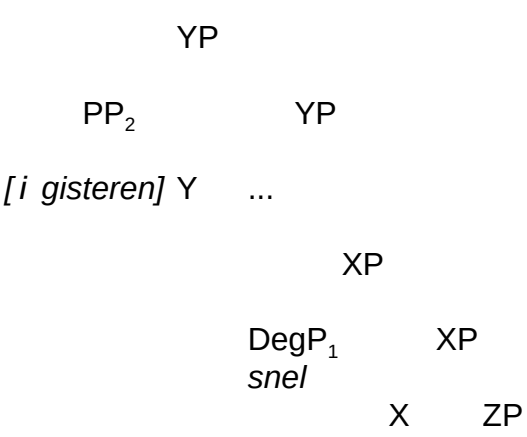
The prepositions *voor - om/op - na* `before - at/on - after' express that the event they modify precedes, coincides with or follows the time mentioned. In (a,b) the noun phrases *acht uur* and *woensdag* are not indexical (they allow iterative readings, for example). *Komende woensdag* `next Wednesday', *gisteren* `yesterday' and *morgen* `tomorrow', however, are indexical. Strikingly, these indexical noun phrases do not allow an overt preposition that expresses temporal overlap. In fact, using *woensdag* `Wednesday' without any preposition or prenominal modification yields an indexical interpretation in Dutch, even though *woensdag* is not indexical in itself like *gisteren* is:

(ii) Woensdag ga ik naar Amsterdam
wednesday go I to Amsterdam
`I'm going to Amsterdam next Wednesday'

(28)



(29)



Consider again the examples from section 2.2.2.5. Those with *ongelooflijk* `incredibly' modifying *snel* `quickly' have the structure in (28) above, those with *gisteren* `yesterday' modifying part of the sentence (including *snel*) have the structure in (29) above.

(30) a Janna heeft ongelooflijk snel dat boek uitgelezen
Janna has incredibly quickly that book out-read
`Janna has finished that book incredibly fast'

b Janna heeft gisteren snel dat boek uitgelezen
Janna has yesterday quickly that book out-read
`Janna quickly finished that book yesterday'

(31) a * Ongelooflijk$_i$ heeft Janna t$_i$ snel dat boek uitgelezen
incredibly has Janna _ quickly that book out-read
* `Incredibly Janna quickly finished the book'[20]

Given that only the indexical or indexically interpreted noun phrases do not allow a (lexicalized) preposition, I will assume that they are prepositional phrases with an empty preposition that receives a default overlap interpretation (cf. McCawley 1988 as well, contra Larson 1987).

[20] Note that the intended meaning is not:
(i) Incredibly, Janna quickly finished the book

b [Ongelooflijk snel]$_i$ heeft Janna t_i dat boek uitgelezen
incredibly quickly has Janna _ that book out-read
`Incredibly quickly Janna finished the book'

c * [Snel dat boek uitgelezen]$_i$ heeft ze ongelooflijk t_i !
quickly that book out-read has she incredibly _
* `Finished the book quickly, that's what she did incredibly'

(32) a Gisteren$_i$ heeft Janna t_i snel dat boek uitgelezen
yesterday has Janna _ quickly that book out-read
`Yesterday Janna quickly finished that book'

b * [Gisteren snel]$_i$ heeft Janna t_i dat boek uitgelezen
yesterday quickly has Janna _ that book out-read
`Yesterday quickly Janna finished the book'

c ? [Snel dat boek uitgelezen]$_i$ heeft ze gisteren t_i !
quickly that book out-read has she yesterday
`Finished the book quickly, that's what she did yesterday!'

The extraction data in (31) and (32) follow straightforwardly; in structure (28) it is not possible to prepose adverb$_1$ plus XP (cf. (31c)), but extraction of the two adverbs together is fine (cf. (31b)). In structure (29) it is impossible to prepose the two adverbs together (cf. (28b)), but adverb$_1$ plus XP can be extracted (cf. (32c)).[21]

2.3.2 Cinque 1997

Cinque (1997) provides an extensively documented theory of adverbials as specifiers of functional projections in the clausal domain.

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[21] The only unexpected ungrammaticality is that in (31a); apparently a modifier of an adverb cannot be extracted. The structure in (28) in itself does not prevent extraction of *ongelooflijk* `incredibly'. It cannot be the case that (31a) is difficult because *ongelooflijk* might be interpreted as a sentence modifier and hence cause unclarity, because *ongelooflijk* cannot be used as a sentence modifier:

(i) a * Janna heeft ongelooflijk dat boek uitgelezen
Janna has incredibly that book out-read
* `Janna has incredibly finished that book'

b * Ongelooflijk heeft Janna dat boek uitgelezen
incredibly has Janna that book out-read
* `Incredibly did Janna finish that book'

I have no explanation to offer here for the ungrammaticality of (31a), nor does Corver (1991, pp.227-238) in his discussion of left branch extraction of adjectival modifiers out of adjective phrases.

On the basis of a relative ordering of numerous adverbs, he arrives at an extensive range of adverbs. For example, *mica* `not' must precede *più* `any longer' and *più* must precede *sempre* `always' (ibid. pp.4-6, Cinque's translations):

(33) a Non hanno chiamato *mica più*, da allora
`They haven't telephoned not any longer, since then'
b * Non hanno chiamato *più mica*, da allora

(34) a Da allora, non ha *più sempre* vinto
`Since then, he has no longer always won'
b * Da allora, non ha *sempre più* vinto

(35) a Gianni non ha *mica sempre* vinto
`Gianny hasn't not always won'
b * Gianni non ha *sempre mica* vinto

(36) a Da allora, non accetta *mica più sempre* i nostri inviti
`Since then, he doesn't not any longer always accept our invitations'
b * Da allora, non accetta *mica sempre più* i nostri inviti
c * Da allora, non accetta *sempre mica più* i nostri inviti
d * Da allora, non accetta *sempre più mica* i nostri inviti
e * Da allora, non accetta *più mica sempre* i nostri inviti
f * Da allora, non accetta *più sempre mica* i nostri inviti

As a second example, modal adverbs and evaluative adverbs (at the higher end of the functional domain) show a similar restriction in their order (ibid., p.17):

(37) a Gianni accetterà *forse saggiamente* il vostro aiuto
`Gianni will perhaps wisely accept your help'
b * Gianni accetterà *saggiamente forse* it vostro aiuto

(38) a Gianni sarà *probabilmente forse* ancora in grado di aiutarci
`Gianni will probably perhaps still be able to help us'
b * Gianni sarà *forse probabilmente* ancora in grado di aiutarci

(39) a Gianni ha *per fortuna probabilmente* accettato
`Gianni has luckily probably accepted'
b * Gianni ha *probabilmente per fortuna* accettato

Cinque claims that the ordering of adverbs is rather rigid. He argues that the rigidity is best explained by the assumption that adverbs are specifiers of functional projections (cf. Alexiadou 1994 as well). Thus, the ordering of adverbs can be

attributed to the ordering of the functional projections the adverbs are specifiers of.

In addition, between every two (otherwise adjacent) adverbs there is exactly one (head) position in which a participle can occur (Cinque 1997, p.62, ex.(1), my gloss, his translation):

(40) a Da allora, non hanno **rimesso** di solito mica più sempre completamente tutto bene in ordine
*since then, they haven't **put** usually not any-longer always completely everything well in order*
`Since then, they haven't usually not any longer always put [completely] everything well in order'
b Da allora, non hanno di solito **rimesso** mica più sempre completamente tutto bene in ordine
c Da allora, non hanno di solito mica **rimesso** più sempre completamente tutto bene in ordine
d Da allora, non hanno di solito mica più **rimesso** sempre completamente tutto bene in ordine
e Da allora, non hanno di solito mica più sempre **rimesso** completamente tutto bene in ordine
f Da allora, non hanno di solito mica più sempre completamente **rimesso** tutto bene in ordine

Cinque accounts for the order *...Adverbial-X^0-Adverbial-X^0-Adverbial-X^0...* as follows. Besides his hierarchy of adverbs, he also argues for a universal hierarchy of functional projections like Mood Phrases, Tense Phrases and Aspect Phrases, with several types of each. Cinque's line of reasoning in this is that all functional projections for which there is morphological evidence in any language are part of a universal hierarchy that is present in all languages. That is to say, if there is a language that has morphological evidence for two functional projections α and β, and they occur in a particular order, then these projections α and β will also occur in that particular order within the full range of functional projections that holds across languages (Cinque 1997, p.85). Morphological evidence for a functional projection consists of one of the following: `non-closing' (agglutinating) suffixes, `closing' (inflectional) suffixes, auxiliaries and functional particles.

Cinque (1997) then proceeds by combining the hierarchy of functional projections and the hierarchy of adverbs in such a way that the adverb phrases fill up the specifier positions of the functional projections he distinguishes. The order

...Adverbial-X^0-Adverbial-X^0-Adverbial-X^0... follows if a past participle is able move to each of these head positions (represented by X^0) between two adverbs:

(41) a Da allora, non hanno [_ **rimesso** [di solito **X^0** [mica **X^0** [più **X^0** [sempre **X^0** [completamente **X^0** [tutto bene in ordine
*since then, they haven't **put** usually not any-longer always completely everything well in order*
`Since then, they haven't usually not any longer always put [completely] everything well in order'

The entire structure consists of the following functional heads, paired with adverb types in their respective specifier positions (cf. Cinque 1997, p.178). The notation in (42) is mine:

(42)
[*frankly* $Mood_{speech\ act}$
[*fortunately* $Mood_{evaluative}$
[*allegedly* $Mood_{evidential}$
[*probably* $Mod_{epistemic}$
[*once* T(Past)
[*then* T(Future)
[*perhaps* $Mood_{irrealis}$
[*necessarily* $Mod_{necessity}$
[*possibly* $Mod_{possibility}$
[*willingly* $Mod_{volitional}$
[*inevitably* $Mod_{obligation}$
[*cleverly* $Mod_{ability/permission}$
[*usually* $Asp_{habitual}$
[*again* $Asp_{repetitive(I)}$
[*often* $Asp_{frequentative(I)}$
[*quickly* $Asp_{celerative(I)}$
[*already* T(Anterior)
[*no longer* $Asp_{terminative}$
[*still* $Asp_{continuative}$
[*always* $Asp_{perfect(?)}$
[*just* $Asp_{retrospective}$
[*soon* $Asp_{proximative}$
[*briefly* $Asp_{durative}$
[*characteristically(?)* $Asp_{generic/progressive}$
[*almost* $Asp_{prospective}$
[*completely* $Asp_{SgCompletive(I)}$
[*tutto* $Asp_{PlCompletive}$
[*well* Voice
[*fast/early* $Asp_{celerative(II)}$
[*completely* $Asp_{SgCompletive(II)}$
[*again* $Asp_{repetitive(II)}$
[*often* $Asp_{frequentative(II)}$
]]]

The particle expressing habituality is analyzed as representing a functional head. It is translated by an adverb phrase in English.

If a grammatical relation is expressed by a functional head in one language, but by an adverbial in another language, it is attractive to consider the adverbial as closely connected to the functional head. In other words, if an adverbial expresses the same relation in one language as a functional head (particle) in another language, the adverbial is elegantly analyzed as a specifier of the functional projection at issue.

This is an attractive thought indeed. In fact, it seems plausible to analyse a deictic temporal adverbial like *yesterday* as a specifier of a functional head representing Tense or Past Tense (although Cinque himself (1997, p.150) notes that this is not straightforward in Italian because the distribution of an adverbial like *yesterday* is variable beyond expectation). However, adverbials like *yesterday*, or like *usually* in (43) appear as modifiers in, for instance, noun phrase modification:

(44) a de gisteren nog prachtige bloemen
the yesterday still beautiful flowers
`the flowers that were still beautiful yesterday'
b de gewoonlijk incorrecte voorspellingen
the usually incorrect predictions

The adverbials in (44) seem to represent the same meaning as they do in sentential contexts. Cinque (p.178) assumes that *usually* is a specifier of the functional head representing habitual aspect. If the adverb is really closely related to the functional head, this implies that the noun phrases in (44) incorporate functional heads for tense and habitual aspect to host the adverbials. Such modification cases will be discussed in section 2.4.2.1 below.

2.4 Issues in comparing specifier and adjunct approach

There are a number of issues that have to be addressed in comparing an analysis in which modifiers are specifiers (cf. Cinque 1997) and one in which modifiers are adjoined to the phrase they modify. Details of the analyses follow below.

A first general advantage of a specifier analysis seems to be that we are able to do without base-generated adjunction. The specifier analysis discussed in the last section is claimed by Cinque to dispense with base-generated adjunction

for adverbials. One of the conceptual arguments in support of his analysis that he puts forward is precisely that a syntactic system that does not distinguish adjuncts from specifiers is more restrictive, and hence more desirable, than one that does distinguish them (cf. Cinque 1997, p.61 and the discussion in the beginning of section 2.3.2 on Sportiche's 1994 analysis).

However, there are instances of modification that Cinque (1997) does not address. Among those are modification by prepositional phrases and modification of degree phrases by other degree phrases. If Cinque's analysis has to account for all these cases as well, we might not end up with such a restricted theory after all. In fact, he would be forced to assume that all functional projections in the clausal domain are replicated in each phrase that can be modified by the same adverbials as can occur in the clausal domain (cf. the discussion in section 2.4.1.2 below).

In defense of the adjunction analysis, we may note that adjunction need not *a priori* be unrestricted: there need not be a huge overgeneration of possible adjunction sites. That is, restricting the possibilities of adjunction in a principled way, like for instance in Kayne (1994), already provides a syntactic theory that is highly restrictive. In contrast, a theory in which no adjunction whatsoever is allowed will probably have to provide a number of additional hypotheses as well to cover the data.

A second advantage of a specifier analysis, according to Cinque (1997, p.61), is that modifiers are arguably left-branch elements. Adjunction, however, used to be available both to the left and to the right of an XP, and hence is too unrestrictive to capture the left-branch nature of modifiers. In contrast, specifiers are already taken to be left-branch elements, which leads Cinque to the conclusion that it is preferable to analyse modifiers as specifiers. Again, in a theory like Kayne's (1994) antisymmetric syntax (that is in fact adopted by Cinque 1997), both adjuncts and specifiers are left-branch elements and it is questionable whether it is necessarily more restrictive to analyse them as specifiers than it is to analyse them as adjuncts.[22]

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[22] Ernst (1997) argues that right-adjunction should be allowed for in adverb syntax. His major argument is that postverbal adjectives take scope over adjectives to their left:

(i) a Probably he purposely killed the cat
b He killed the cat purposely probably

Ernst claims that alternatives to right-adjunction can not properly account for the scopal behaviour of postverbal adverbials. However, he appears to assume that any alternative to right-adjunction will generate sentence-final adverbs in low, VP-internal position. This is clearly incorrect.

An account that Ernst (1997) does not consider is one in which the adverbials are generated in

Other than the questions whether there should be adjunction or whether there are only left-branch elements, two major issues arise in comparing the specifier and the adjunct approach to modification. The first is how to account for basic ordering restrictions among adverbs. The second is how to account for the relative order between adverbs and arguments of the verb. These issues will be discussed in the next two subsections.

2.4.1 The relative ordering of modifiers among themselves

In this subsection I will consider the ordering of adverbs among themselves. As an example, modal adverbs will generally have higher scope than manner adverbs:

(45) a John probably has skillfully cut the film
b John has probably skillfully cut the film[23]
c * John has skillfully probably cut the film

In an adjunction-based theory, the relative ordering among adverbs must be derived from differences in their scopal behaviour (cf. Ernst 1997 and Shaer 1997).[24]

In a specifier system like Cinque's (1997), the relative ordering among adverbs is considered to be the effect of the relative ordering of the functional projections that the adverbs are specifiers of.[25] The relative order of functional

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`normal' left-branch positions (whether they are specifiers or adjuncts) and in which part of the clause can move into the specifier position of an adverbial (along the lines of Barbiers 1995, Costa 1997):

(ii) a [probably [he [purposely [killed the cat]]]]
b [probably [he [[killed the cat]$_i$ purposely [t_i]]]]
c [[he [[killed the cat]$_i$ purposely [t_i]]]$_k$ probably [t_k]]

Assuming that movement to the specifier position of a modifier is possible, the question to be answered is what the trigger for such movements would be. In Barbiers' system, the trigger for such movements is the aim to arrive at the correct interpretation, viz. that the adverb *probably* indeed has scope over *he purposely killed the cat*.

[23] Note that the intended meaning in this example is not `probably skilfully'. The intended meaning is the same as in the (a) example.

[24] Alternatively, as noted by Tim Stowell (pc) if adverbs select the phrase they modify as specifiers, argument structure and selection will determine their relative ordering.

[25] It should be noted that Cinque's (1997) analysis of adverbs is not the only conceivable analysis of adverbs as specifiers. In his book he develops a rather rigid theory with a one to one correspondence between an adverb type and the specifier position of a designated functional projection. As we will see below, the rigidity of the one to one correspondence between adverb type and functional projection forces

projections is not stipulated, but based on partial orderings of functional elements observed in numerous languages (cf. section 2.4.2 above). As the structure in (42) shows, Cinque assumes that *probably* is a specifier of the functional head expressing epistemic modality ($Mod_{epistemic}$). *Skillfully* will presumably be a specifier of the modality termed `ability' ($Mod_{ability}$). Since epistemic modality precedes the modality of ability, *probably* will precede *skillfully*.

Another example of adverb ordering is given by Cinque (1997, p.64 ff.) when he compares his specifier analysis with an analysis in which adverbials adjoin freely in any possible order. Consider *mica* `not' and *più* `any longer', which are Italian adverbs that both can occur either to the left or to the right of a past participle:[26]

(46) a Non hanno mica mangiato
not have-3PL not eaten
`They haven't not eaten'
b Non hanno mangiato mica

(47) a Non hanno più mangiato
not have-3PL any-longer eaten
`They haven't any longer eaten'
b Non hanno maniato più

If they occur together in one clause, they can still both occur either to the left or to the right of the past participle (or one to the left and one to the right), but their order is fixed: *mica* has to precede *più* in all cases.

(48) a Non hanno mica mangiato più
not have-3PL not eaten any-longer

Cinque (among other things) to assume a number of agreement projections for each argument of the verb.

Another conceivable specifier analysis would be one in which adverb phrases are specifiers of functional projections in general, but not of designated ones. A more loose-fit system like this is able to capture the observation that adjectives modify nominal projections, and adverbs modify non-nominal projections (verbal, adjectival, adverbial and prepositional ones). On the assumption that a functional projection encodes its nominal or non-nominal origin, an adjective could check whether the projection it is the specifier of is one within a nominal domain. In this case, the adjective will usually express some form of agreement with the noun (cf. section 2.2.1). An adverb, or an adverbially used adjective, will have to check the non-nominal nature of the projection it is the specifier of. Adverbs are not inflected, in general, but of course we can opt to view the absence of inflection as a form of agreement as well.

[26] The following examples are from Cinque (1997, ex. (7-11)). The translations are his, the glosses are mine.

`They haven't not eaten any longer'

b * Non hanno più mangiato mica
not have-3PL any-longer eaten not
`They haven't any longer eaten not'

(49) a Non hanno mica più mangiato
not have-3PL not any-longer eaten
`They haven't not any longer eaten'

b * Non hanno più mangiato mica
not have-3PL any-longer eaten not
`They haven't any longer not eaten'

(50) a Non hanno mangiato mica più
not have-3PL eaten not any-longer
`They haven't eaten not any longer'

b * Non hanno mangiato più mica
not have-3PL eaten any-longer not

Cinque argues that the adjunct approach has to stipulate that *mica* will always precede *più*. According to him, this additional stipulation renders the adjunct approach the non-favored one (but see the discussion on scopal relations between adverbs below).

Of course, the immediate question that has to be answered is: why are functional projections ordered as they appear to be? If this ordering is in any way scope-related, we seem to have a classical instance of the chicken or egg paradox.

I do not fully agree with Cinque's line of reasoning when he compares his specifier analysis with an adjunction analysis in which phrases are adjoined freely in any possible order. When Cinque claims that the adjunct approach always predicts both orders between two adverbs, he leaves semantic scope effects out of consideration. In a footnote (Cinque 1997, fn. 6, p.64), he does mention the possibility of a (semantic) ordering principle that could determine the relative order of adverbs, e.g. that *più* `any-longer' follows *mica* `not' (cf. the examples in (46)-(50)). However, he argues that his specifier approach is still the superior theory, because it does not have to state such an ordering principle.

There are a number of issues to be dealt with in this context.

First, if scope is expressed structurally, which is rather straightforward in the antisymmetric framework assumed in this book, then *having scope over* translates almost directly into *structurally higher than* (abstracting away from

reconstruction effects for now).[27] Thus, if an adverb$_1$ has scope over another adverb$_2$, it will occur structurally higher than adverb$_2$. In turn, this means that in general adverb$_1$ will occur to the left of adverb$_2$.

Secondly, if the ordering principle needed to complement the adjunct approach is semantic in nature, the starred sentences in the examples above are semantically ill-formed instead of ungrammatical. Since all sentences need to be interpreted eventually, I do not think that the scope-based ordering principle needed by the adjunct approach is in any way additional or superfluous.[28,29]

As such, consider *probably* and *skillfully* in (45), repeated as (51):

(51) a John probably has skillfully cut the film
b John has probably skillfully cut the film[30]
c * John has skillfully probably cut the film

If someone creates a physical object, like carving a piece of wood into a little statue, he can do so skillfully. Similarly, someone can skillfully cut a film. However, in (51c) it is probable, but not absolutely certain that John cut the film. If it is not clear whether the cutting actually took place, we cannot say that John did so skillfully, because we do not even know whether it was done at all. As such, it *skillfully* cannot precede *probably* in (51c), because in that case it would have scope over it, which yields an interpretation that makes no sense.

A third issue in comparing a specifier and an adjunction analysis with respect to the order of adverbials is that, according to Cinque (1997), his specifier

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27 Of course, a scopal approach to the adverb ordering will have to take into account several problematic issues, such as reconstruction phenomena and adverbs that appear sentence-finally, yet have scope over the entire clause (cf. footnote 22 for a proposal).

28 In Zwart (1997) the distribution of sentence and `lower' adverb phrases is explained in terms of intonational factors.

29 Apart from my impression that Cinque (1997) does not give the adjunct approach the attention it deserves, it should be noted that his rigid specifier theory has its own disadvantages. For one, it has to stipulate which type of adverb is the specifier of which designated functional projection. For some adverbs the combination with a specific functional head is straightforward (e.g. an evaluative adverb in the specifier position of an Evaluative Mood phrase). Other combinations, however, (e.g. an adverb like *well* as specifier of a Voice projection), are less easy to defend. In addition, the same interpretative component used to account for ordering of adverbials in the adjunct analysis will have to evaluate sentences built in accordance with Cinque's specifier approach.

30 Note that the intended meaning in this example is not `probably skilfully'. The intended meaning is the same as in the (a) example.

theory of adverbs is to be preferred over an adjunction theory, because it is highly restricted and easy to falsify. Indeed, his theory appears to be falsified by such examples as given by Ernst (1997, p.12, exx. (96), (97)):

(52) a Carol willingly has frequently made extra trips
b Carol frequently has willingly made extra trips
c Carol has made extra trips willingly frequently
d Carol has made extra trips willingly frequently

(53) a Purposely he again disobeyed orders
b Again he purposely disobeyed orders
c He disobeyed orders purposely again
d He disobeyed orders again purposely

In each of these examples, two modifiers occur in either order, both sentence-initially or -internally and sentence-finally. If they are specifiers of designated functional projections, a number of extra hypotheses are needed to account for the data in (52) and (53).

Of course, faced with two adverbs that apparently can occur in both possible orders, there are ways for Cinque (1997) to save his main hypothesis that their distribution is fixed by the functional projections they are specifiers of. That is to say, he can claim that an adverb exceptionally precedes another adverb in such and such an example, because the former is focused (as in (53) above) or fronted for other purposes. Additionally, Cinque (1997, par.1.6) argues that an adverb that appears in two positions can "only deceptively [have] that same interpretation in the two positions".

2.4.1.2 Other cases of modification

In addition, it should be noted that Cinque (1997) does not discuss any prepositional modifiers, such as the participant adjuncts of Ernst (1997): instrumentals (*with a shoe*), benefactives (*for anyone listening*), locatives (*on the ledge*), goals (*to the shore*), etc. Members of this class especially can occur in various orders (Ernst 1997, p.1, ex.(6)):

(54) a The game took place [on Sunday]$_1$ [in the park]$_2$ [with everyone in attendance]$_3$

b The game took place [in the park]$_2$ [on Sunday]$_1$ [with everyone in attendance]$_3$
c The game took place [with everyone in attendance]$_3$ [on Sunday]$_1$ [in the park]$_2$
d The game took place [in the park]$_2$ [with everyone in attendance]$_3$ [on Sunday]$_1$

Given such ordering possibilities among participant adverbials, it is hardly plausible that they should be assigned specifier positions in designated functional projections. One could claim that adverbial modifiers are a type of modifier that is different from prepositional ones, and hence should receive a different treatment. However, I take it to be highly preferrable to have a unified theory of modification.

Another aspect of modification is not provided for in Cinque's analysis either. As discussed in chapter 1, adverbials can also modify degree phrases and prepositional phrases:

(55) a dat is een **ongelooflijk mooi** boek
`that is an incredibly beatiful book'
b het **waarschijnlijk groene** boek komt volgend jaar uit
the probably green book comes next year out
`the book, that will probably be green, will appear next year'
c zij zit **diep in de put**
she sits deeply in the well
`she's deeply depressed'
d dat is **pijnlijk betrekkelijk**
that is painfully relative
e de **klaarblijkelijk bloedmooie** roman
the apparently blood-beautiful novel
`the apparently very beautiful novel'
f de **gisteren nog prachtige** bloemen
the yesterday still beautiful flowers
`the flowers that were still beautiful yesterday'

In general, adverbs modify anything that adjectives do not. Or, the other way around, adjectives are modifiers in the nominal domain, adverbs are modifiers outside of the nominal domain.

If adverbials are adjuncts, we can simply assume that they adjoin to PPs and DegPs as well. However, if adverbs are specifiers of designated functional projections in the clausal domain, we are forced to assume that the adjectival domain has similar functional projections to host the adverbs, and that the

prepositional domain also involves such functional projections.[31] This is what we expect if the occurrence of an adverb like *probably* is indeed tied up with the specifier position of a functional projection expressing epistemic modality. In short, Cinque's rigid specifier theory forces him to assume that all functional projections introduced in his full range of functional projections (cf. (42) above) occur not only in the clausal structure, but will also have to be repeated (at least) in the adjectival and prepositional domain to accommodate any adverb that might appear there.[32]

In the adjunct approach, however, there are no extensive requirements concerning the constituent hosting the adjoined adverbial, except maybe that it is non-nominal and that it does not have a specifier. It is not a surprise, then, that an adjoined adverb is able to modify phrases of more syntacic categories than just a part of a clause.

In light of the general distribution of modifiers, then, the assumption that adverbials are adjuncts appears to provide the simplest theory. The following section provides a conceptual argument that, in my view, definitely decides in favour of an adjunct approach.

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[31] Prenominal modification appears to involve a full clausal structure in Dutch. For examples, modification by a past participle is allowed:

(i) de opgegeten koekjes
the up-eaten cookies
`the cookies that were eaten'

In addition, all types of modifiers that appear in the clausal domain are also allowed in prenominal modification:

(ii) a Die kok werkt nog altijd met oude keukenhulpjes
that cook works still always with old kitchen-tool-DIM-s
`That cook still uses old kitchen tools'

b de nog altijd met oude keukenhulpjes werkende kok
`*the still always with old kitchen-tool-DIM-s working cook*
`the cook who still uses old kitchen tools as ever'

Similarly, we may view (55f) as involving a full clausal structure:

(iii) a De bloemen waren gisteren nog prachtig
the flowers were yesterday still beautiful
`The flowers were still beautiful yesterday'

b de gisteren nog prachtige bloemen
the yesterday still beautiful flowers
`the flowers that were still beautiful yesterday'

Examples like (55c), however, in which a prepositional phrase is modified by a degree phrase, are less likely to involve the range of functional projections proposed by Cinque (1997).

[32] In a theory in which adverb phrases are specifiers of functional projections in general (i.e. not of designated projections), we are not forced to assume that all functional projections are repeated in the domain of each syntactic category.

However, considering the fact that adverbs can modify e.g. prepositional phrases, we would be forced to assume that there is at least one functional projection above a PP that the adverb can `use' as a host. The same holds for the adjunct approach whenever the phrase adjoined to has a specifier; in Kayne's (1994) antisymmetry system each phrase can have either one specifier or one adjunct.

2.4.2 The relative ordering of arguments and modifiers

Besides the ordering of adverbs among themselves, the order of adverbs relative to arguments of the verb is also a fundamental issue in a theory of modification.

Cinque (1997) assumes that arguments of the verb end up in specifier positions of agreement phrases. These arguments can occur in several positions relative to adverbs. For example, *Gianni* in (56) can precede or follow *rapidamente* `rapidly' or *di nuovo* `again' (cf. Cinque 1997, pp.185, ex. (4a'-a'') and (4c'-c'')):

(57) a Rapidamente Gianni alzò di nuovo il braccio
quickly Gianni raised again his arm
a' Gianni rapidamente alzò di nuovo il braccio
b Di nuovo Gianni rifiutò l'invito
again Gianni refused the invitation
b' Gianni di nuovo rifiutò l'invito

Assume that *rapidamente* is one of the *cleverly*-type of adverbs and occurs in the specifier position of $Mod_{ability/permission}$ and that *di nuovo* is the specifier of the $Asp_{repetitive(I)}$ head (cf. Cinque's full functional structure in (42) above).

Since Cinque's distribution of adverb types over functional projections is rigid, he is forced to assume that there are several agreement projections in which the subject can end up. In support of this assumption, Cinque (1997, p.191) refers to work by Beghelli & Stowell (1996), who argue for several DP-related positions, based on scopal behaviour of different DP types.

It should be noted, however, that the examples that Beghelli & Stowell use to argue for several DP-positions do not involve interaction with (for instance modal) adverbials. Therefore, Cinque cannot simply assume that the projections they argue for in light of noun phrase interpretation (e.g. DistributiveP or ShareP) will straightforwardly range among the functional projections in his clausal structure. As such, he cannot assume that these projections provide the subject positions (relative to particular adverbials) that he observes either.[33]

In the same vein, Cinque (1997) has to assume that an object DP finds a number of agreement projections available as well to account for the positions the object may occupy relative to the fixed sequence of adverbs and functional heads.

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[33] Cinque (1997) does not discuss the question of how the agreement projections for the verb's arguments are distributed among the functional projections that host the adverbs.

Consider the examples below:

(58) a Janna heeft gisteren het boek gekocht
Janna has yesterday the book bought
`Janna bought the book yesterday'
b Janna heeft het boek gisteren gekocht
Janna has the book yesterday bought
`Janna bought the book yesterday'

(59) a dat ik gisteren het boek gelezen heb
that I yesterday the book read have
`that I read the book yesterday'
b dat ik het boek gisteren gelezen heb
that I the book yesterday read have

In the (58-57a) examples we observe an adverb-object order, in the (58-57b) examples an object-adverb order. In these examples, the differences in constituent order do not seem to correspond with any meaning differences. For a long time the standard assumption was that the adverb *gisteren* is adjoined to the VP, and that the definite object (in contrast to indefinites) can optionally move past it to get the (58b) order. De Hoop (1992) argued convincingly that indefinite objects are indeed able to precede adverbs, but that this order corresponds with an interpretation that is different from that of the adverb-indefinite object order.

The intriguing question here is whether it is indeed the adverb that has a fixed position (e.g. adjoined to VP) and the object that does or does not move past it. The alternative is that the object occupies a fixed position and that the adverb either moves past it or is able to occur in positions on either side of the object.

If Cinque is correct that the adverbs occur in fixed positions, he will have to assume that the scrambling phenomena in (58) and (57) are derived from movement of the object from a position to the right of the adverbial *gisteren* `yesterday' to a position to the left of the adverbial.

However, Zwart (1993, pp.302-319) and Rijkhoek (1994) argue that an object noun phrase in Dutch occupies the specifier position of AgrOP in both (58a,b) and (59a,b) (unless it is focused). In its movement to that position, it may cross *gisteren* `yesterday': this yields the order in (59b). In (59a) however, the object also occupies the specifier position of AgrOP: the order adverbial - object (*gisteren het boek*) implies that the adverbial occurs in a position that is structurally higher than that of the object. In a minimalist approach, then, the object is argued

to occur in a specific position (the specifier of AgrOP) that is well motivated. Adverbials, on the other hand, occur in positions on both sides of the object noun phrase.

2.4.3 Fixed position for adverbs or for arguments

In the preceding section we discussed some examples in which adverbials and the arguments of the main verb occur in various orders:

(60) a Rapidamente Gianni alzò di nuovo il braccio
quickly Gianni raised again his arm
a' Gianni rapidamente alzò di nuovo il braccio
b Di nuovo Gianni rifiutò l'invito
again Gianni refused the invitation
b' Gianni di nuovo rifiutò l'invito

(61) a Janna heeft gisteren het boek gekocht
Janna has yesterday the book bought
`Janna bought the book yesterday'
b Janna heeft het boek gisteren gekocht
Janna has the book yesterday bought
`Janna bought the book yesterday'

To account for the variable order within a clause of (on the one hand) verbs and arguments and (on the other hand) modifiers, one cannot but make a choice as to which category occupies fixed positions (relative to which the position of the other categories can be determined).[34]

Given the two categories, either the verbs and their arguments occupy specific positions, or the adverbs do. If one decides that the verbs and their arguments occupy specific positions, adverbials will be bound to occur in variable positions, as in the adjunct approach. If one decides that adverbials occur in specific positions, something like the specifier approach will result.[35]

---

[34] It is also conceivable that both agreement projections and functional projections allow for a free ordering. If nothing whatsoever occupies a fixed position, however, it is extremely hard to argue for any phrase what its position will be.

[35] For both cases a head approach is also conceivable. Since I argued in section 2.2 that the head approach leads to a number of problems, I will no longer consider it here.

In the specifier system, verbs can occupy the head positions of the functional projections, all of which will be present in every sentence in every language. Arguments of the verb occur in agreement projections. To account for the relative order between specific adverbs and arguments, these agreement projections have to be able to occur in several places in between the other functional ones. That is to say, the choice to assign fixed positions to adverbs leads to the assumption that for each argument of the verb there are several agreement projections. In contrast, the adjunct approach assumes that the position of adverbs or other modifiers is defined relative to verbs and arguments.

In view of this, let us consider the status of the verb and its arguments on the one hand and that of modifiers on the other hand. The verb and its arguments are the basic building blocks of a clause; without them there is not even a clause. Modifiers, in contrast, are optional: they add information about that speaker's attitude to what he is saying (62a) or about the way in which someone is doing something (62b):

(62) a **Evidently**, John went to the market
b He put the eggs down **clumsily**

Crucially, however, adverbials can easily be left out of a clause without causing ungrammaticality:

(63) a John went to the market
b He put the eggs down

In view of the fact that the verb and its arguments are essential to a clause and that modifiers are optional, is it conceptually attractive to assume that the verb and its arguments have to adjust themselves to the position of the optional modifiers, as they must in the specifier analysis? I do not think so.

Instead, it seems to me that one should think of clausal structure as based on the most elementary building blocks: the verb and its arguments. This is exactly what is expressed by the adjunct approach: the verb and its arguments constitute the base line and the position of any modifiers that occur in a clause will have to be defined relative to their position. It seems to me that this approach gives full justice to the conceptual status of verbs, arguments and modifiers.

I conclude that, in my view, the adjunct approach to adverbials is conceptually superior to the specifier approach.

2.5 Conclusion

In this chapter I compared three types of analyses of the structural status of adverbials. First I argued that adverbs do not appear as heads in the functional domain of a clause. I then compared an analysis in which adverbials are specifiers of designated functional projections (cf. Cinque 1997) with an analysis in which adverbials are adjoined to the phrase they modify. I concluded that that the latter is more easily suited to account for modification in general. In addition, I argued that the adjunction analysis is conceptually superior to the specifier analysis of adverbials, because it allows us to express that predicates and their arguments are the basic elements in a clause, with the adjunct status of adverbial modifiers expressing their optional nature. I conclude that adverbial degree phrases, and modifiers in general, are adjuncts.

Chapter 3

Degree Phrases

part II

The Internal Structure

3.1 Introduction

In the preceding chapter I discussed the structural status of degree phrases that are used as adverbials. This chapter is concerned with the internal structure of degree phrases like comparatives and adverbial phrases involved in *so AP ... that* constructions:

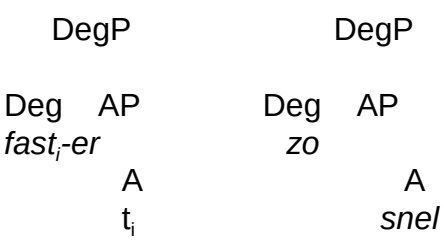
(1) a Janna walked fast**er** yesterday **than** she ever did
b Janna heeft gisteren snell**er** gelopen **dan** ooit
Janna has yesterday faster walked than ever
c Ze liep **zo** snel **dat** niemand haar bij kon houden
she walked so fast that nobody her up could keep
`She walked so fast that noone could keep up with her'

Faster, *sneller* `faster' and *zo snel* `so fast' in (1a-c) are degree phrases consisting of a degree head with an AP complement (an analysis originally proposed by Abney 1987).

For the moment, we will not consider the subclauses in (1a-c), but focus on the internal syntax of degree phrases. Chapter 4 will take up the question of whether the subclauses in (1a-c) (which are dependent on the degree elements *-er* and *so*) are generated externally or internally to the degree phrase. Several analyses of the dependency between result or comparative clauses and the degree heads they occur with will be presented there.

In this chapter I will discuss the internal structure of degree phrases such as *faster* and *zo snel* `so fast' and argue for the following (cf. Abney 1987):

(2)



Section 3.3 will present some very interesting data that were originally discussed by Corver (1994, 1997): *how*, *so*, *too* etc. on the one hand, and *more*, *less*, *most* etc. on the other, show different behavior in a number of syntactic environments. On the basis of these data degree phrases like *more intelligent* and *so fast* will be argued to differ structurally. Their different behavior leads Corver (1994, 1997) to the conclusion that the two groups are to be analyzed differently as well. The conclusions that he draws will be discussed in section 3.4. Although I agree with the position that *more intelligent* and *so fast* differ structurally, as do Doetjes, Neeleman & Van der Koot (1998), but do not agree with Corver's analysis of how they differ. I will show in section 3.5 that his conclusions are incorrect and present an alternative analysis. The concequences of my analysis will be spelled out in sections 3.6 to 3.8.[1]

3.2 Corver 1990

Corver (1990) applies Abney's (1987) proposal to consider degree elements as heads selecting adjective, adverb and quantifier phrases to Dutch. Abney argued that determiners in a noun phrase behave like the functional head Infl (which projects IP) in sentences. So instead of the traditional analysis of determiners as specifiers in the NP, he proposed to have a determiner project a DP, with the NP as sister to D^0. This mirrors the IP/ VP relationship. Analoguously, Abney analysed

[1] Doetjes (1997) and Doetjes, Neeleman & Van der Koot (1998) independently arrived at similar conclusions. Their work will be woven into section 3.5 and the rest of this chapter. They provide an interesting semantics of degree items that I will take over in part.

degree elements, formerly considered to be specifiers of adjectives and adverbs, as heads projecting a DegP and selecting an AP.[2] Simplified:[3]

(3) a $[_{ip}$ _ $[_{i'}$ I $[_{vp}$ _ $[_{v'}$ V _]]]]

IP

spec I'

I VP

b $[_{dp}$ _ $[_{d'}$ D $[_{np}$ _ $[_{n'}$ N _]]]]

DP

spec D'

D NP

c $[_{degp}$ _ $[_{deg'}$ Deg $[_{ap}$ _ $[_{a'}$ A _]]]]

DegP

spec Deg'

Deg AP

Corver (1990) distinguishes the following Dutch and English items as instances of the degree head:

---

[2] In Abney (1987, p.301) adjectives, adverbs and quantifiers are distinguished from each other by their values for the features [+/-Q] and [+/-Adv].

[3] The full structure Corver (1990) assumes for degree phrases is the following:

(i) $[_{degp}$ spec $[_{deg'}$ Deg^0 $[_{ap}$ spec $[_{a'}$ mod $[_{a'}$ A compl]]]]]

The specifier of the degree phrase may be filled with e.g. measure phrases. Modifiers like *erg* `very', *vreselijk* `extremely' appear in the `mod' position (Corver 1990, p.41):

(ii) a $[_{degp}$ twee meter $[_{deg'}$ te $[_{ap}$ _ $[_{a'}$ breed]]]]
two meter too wide

b $[_{degp}$ _ $[_{deg'}$ zo $[_{ap}$ _ $[_{a'}$ verschrikkelijk $[_{a'}$ mooi]]]]
so terribly beautiful

(4) a hoe, zo, te, even
how, so, too, as
b meer, minder, meest, minst
more, less, most, least

In Corver (1994, 1997), he argues that the items in (4b) should be distinguished from the first group of four items. The data on which he based this distinction is presented in the next section. Section 3.4 presents Corver's interpretation of these data. In section 3.4.2 and subsequent sections this interpretation is argued to be incorrect.

3.3 Arguments to distinguish *so, too* etc. from *more, less* etc.

How, *so*, *too* etc. on the one hand, and *more*, *less*, *most* etc. on the other, show different behavior in a number of syntactic environments. Corver (1994b, pp.5-7) presents examples of *so*-pronominalization in English, extraction of a clitic-pronominal element in Dutch and split topicalization in Dutch.

First, consider *so*-pronominalization in English. *So* is a proform that can replace a variety of phrases, like parts of a clause, a CP, an AP or a DegP. In the pronominalization cases presented by Corver, *more* etc. can cooccur with *so* (the pro-form). *Too*, *as* and *so* (the degree head) etc. cannot cooccur with *so* (the pro-form):

(5) Al seems afraid of Hillary, and Bill seems so too

(6) a Al is afraid of Bill, but [less so] is Hillary
b Of all the careless people, noone is [more so than Bill]
c John is good at mathematics. He seems [enough so to enter our graduate program]

(7) a * Al is afraid of Bill. Maybe he is [too so]
b * John is fond of Mary. Maybe he is [as so as Bill]
c * The weather was hot in Cairo: [so so that we stayed indoors all day]
d * John told me he was afraid of spiders, but I wonder [how so] he really is

An interesting phenomenon is what Corver terms *much*-support: whereas *so, too* etc. cannot cooccur with *so* by itself, the following sentences, with *much* following the degree head, are grammatical:[4]

(8) a Al is afraid of Bill. Maybe he is [too much so]
b John is fond of Mary. Maybe he is [as much so as Bill]
c The weather was hot in Cairo: [so much so that we stayed indoors all day] (Quirk et al. 1985)
d John told me he was afraid of spiders, but I wonder [how much so] he really is

Secondly, in Dutch *meer* `more' etc. permit extraction of a clitic-pronominal element, but *te* `too' etc. do not:[5]

(9) a Piet is bang voor honden, maar Jan is 't_i [een stuk minder t_i dan Piet]
Piet is afraid of dogs, but Jan is it a lot less t than Piet
b Jan leek 't_i me [meer t_i dan Piet]
Jan seemed it me more t than Piet
c Ik vind 't_i 'm [meer dan genoeg t_i]
I consider it him more than enough t

(10) a * Jan is 't_i [een stuk te t_i]
Jan is it a lot too t
b * Wie is 't_i [hoe t_i]?
who is it how t
c * Wie is 't_i [even t_i als Marie]?
who is it as t as Marie
d * Jan is 't_i [zo t_i dat hij haar niet durft aan te kijken]
Jan is it so t that he her not dares at to look

---

4 Note that it is also possible to replace *much* by e.g. *terribly*:
(i) a Al is afraid of Bill: in fact, too terribly so to be able to talk to him
b The weather was hot: but I wonder how terribly so it really was
This observation will be taken up in section 3.7.

5 Please note that *'t* `it' in the Dutch examples represents a weakened form of *dat* `that'. It should not be read as a trace.

Again, the ungrammatical examples can be saved: *zo* `so', *te* `too' etc. can be supplemented with elements like *veel* `much', but also with intensifiers like *erg* `very' or *zeer* `very':[6]

(11) a Wie is 't_i [even zeer/ even erg t_i als Marie]?
who is it as very/ as very t as Marie
`Who is it as badly as Marie?'
b Wie is 't_i [hoe erg t_i]?
who is it how very t
`Who is it how badly?'
c Jan is 't_i [zo zeer t_i] dat....
Jan is it so very that
`Jan is it so badly that...'

In nominal environments as well, *minder* `less', *meer* `more' and *genoeg* `enough' do not cooccur with *veel* `much' when the noun phrase is extracted as a clitic-pronominal element, while *te* `too', *zo* `so' and *even* `as' do cooccur with *veel* `much':

(12) a Jan heeft [zoveel boeken]
J has so-many books
b Jan heeft [te veel boeken]
J has too many books
c Jan heeft [evenveel boeken]
J has as-many books
d Jan heeft [HOEveel boeken] ?[7]
J has how-many books

(13) a Jan heeft er$_i$ [een stuk minder t_i dan Piet]
Jan has there a lot less t than Piet
`Jan has a lot less of them than Piet'
b Jan heeft er$_i$ [meer t_i dan Piet]
Jan has there more t than Piet
c Jan heeft er$_i$ [meer dan genoeg t_i]

---

[6] Corver (1997) does not provide such examples, but only discusses insertion of *much*. See the discussion in section 3.5 below.

[7] WH-in-situ is possible in Dutch in echo questions. The normal word order in questions would be:
(i) [Hoeveel boeken]$_k$ heeft hij t_k ?
how-many books has he
(ii) [Hoeveel t_i]$_k$ heeft hij er$_i$ t_k ?
how-many t_i has he there t_k
`How many of them does he have?'

Jan has there more than enough t

(14) a Jan heeft er$_i$ [zoveel t$_i$]
J has there so-many
b Jan heeft er$_i$ [te veel t$_i$]
J has there too many
c Jan heeft er$_i$ [evenveel t$_i$]
J has there as-many
d Jan heeft er$_i$ [hoeveel t$_i$] ?
J has there how-many t

The third phenomenon distinguishing the two groups concerns split topicalization in Dutch. Again, *meer* `more' etc. do permit topicalization of what Corver claims is their complement, *te* `too' etc. do not:

(15) a Boeken$_i$ denk ik dat hij [meer t$_i$ dan Piet] heeft
books think I that he more t than Piet has
`Books, I think he has more than Piet does'
b Boeken$_i$ heeft hij [(meer dan) genoeg t$_i$]
books has he more than enough t

(16) a [Bang voor honden]$_i$ denk ik dat hij [een stuk minder t$_i$ dan Piet] is
afraid of dogs thing I that he a lot less t than Piet is
b [Gebrand op revanche]$_i$ leek Jan mij toen [meer t$_i$ dan Jo]
keen on revenge seemed Jan to-me then more t than Jo
`Jan seemed to me to be more keen on revenge then than Jo'

(17) a * [Bang voor honden]$_i$ is hij [veel te t$_i$]
afraid of dogs is he much too t
a'? [Bang voor honden]$_i$ is hij [veel te erg t$_i$] om....
afraid of dogs is he much too much t to...

b * [Gebrand op revanche]$_i$ was Jan [zo t$_i$ dat 't een obsessie werd]
keen on revenge was Jan so t that it an obsession became
b' [Gebrand op revanche]$_i$ was Jan [zozeer t$_i$], dat 't een obsessie werd
keen on revenge was Jan so-very t that it an obsession became

In sum, we see the following overall pattern. Items like *so*, *too* etc. cannot occur without a supporting element (for instance *much*, or *erg/ zeer* `very' in Dutch) when the adjective or noun following them is extracted or pronominalized. In contrast, items like *more*, *less* etc. do allow their alleged complement to be extracted or pronominalized without any need of *much*-support.

3.4 Corver 1997

Corver (1997) interprets these examples as follows. He proposes to introduce a quantifier phrase into the [$_{degp}$ [$_{ap}$]] structure as in (18) below:[8]

(18) a DegP

spec Deg'

Deg^0 **QP**

spec Q'

Q^0 AP

spec A'

A^0

In that case, the extended adjectival projection involves two functional heads, which may behave differently. Corver claims that the items representing Deg^0 and the Q^0 head do in fact behave differently: he considers *so*, *too* etc. to be Deg^{0}s and *more*, *less*, etc. to be Q^{0}s.[9]

Let us look at ungrammatical examples like **too so* (where *so* is a proform). On the assumption that *so* replaces AP, Corver claims that the ungrammatical examples can be 'saved' by insertion of *much* into the Q-position of the following structure:

---

[8] Corver (1994, 1997) also develops an account of adjectival inflection in prenominal modification as in:

(i) a de snell**e** auto
b de snelst**e** auto
c de snelst mogelijk**e** auto
d de van zijn vader afhankelijk**e** zoon

His analysis involves an agreement phrase on top of extended projection of the adjective. Unfortunately, a principled account of prenominal modification is beyond the scope of this thesis and I do not discuss this part of his analysis here.

[9] Apart from behavioral differences between the *more*-group and the *too*-group that he observes, Corver (1994, 1997) has a conceptual argument in favor of introducing a quantifier phrase in the extended adjectival projection. In the nominal system as well, there have been proposals to introduce a quantifier phrase and it is attractive to establish a parallel with the nominal system.

(19) a $[_{degp}$ too/as/so $[_{qp} \varnothing$ $[_{ap}$ so]]]
b $[_{degp}$ too $[_{qp}$ much $[_{ap}$ so]]]

On the assumption that *much* represents a quantifier heading a QP, the behavioral pattern of the two groups of items leads Corver (1994, 1997a) to the hypothesis that *more* etc. (i.e. the items that do not need *much*-support) themselves also represent Q^0.[10] In contrast, the items that do need *much*-support are still analyzed as representing a Deg^0.

(20) Corver (1994b):
Items heading DegP include:
as, *so*, *too*, *how*, *that*
Items heading QP include:
much, *more*, *less*, *enough*, *most*, *least*

As such, we get the following (still provisional) structures:

(21) a $[_{degp}$ too $[_{qp} \varnothing$ $[_{ap}$ intelligent]]]
b $[_{qp}$ more $[_{ap}$ intelligent]]]

At this point, the question arises why we cannot insert *much* into the Q^0 position in (21a): * *too much intelligent*. Corver (1994, 1997a) suggests that when the head position of the QP in an (extended) adjectival phrase is not lexically filled by a quantifier, then the adjective moves up to the head of QP (as we will see below, Corver considers the proform *so* to be a full AP that cannot undergo head-movement).

(22) $[_{degp}$ Deg^0 $[_{qp}$ A^0_i+Q^0 $[_{ap}$ t_i]]]

Of course, the movement of the adjective has to be motivated.

Corver (1997a) assumes that both the degree head and the quantifier head function as operators that bind a referential argument position in adjectival predicates (ibid., p.131). The assumption that a degree head binds an argument

[10] Note that Corver (1994, 1997) only provides examples with *much* or *veel* `much' as a `supporter' for the degree heads *too*, *so*, *as* etc. He does not consider *erg/ zeer* `very'.

position in an adjectival predicate was introduced by Zwarts (1992), as an instance of Higginbotham's (1985) Theta-binding.[11]

Zwarts (ibid., p.144) proposes that an adjectival predicate may have a degree argument G (= Grade). G is only present in the Theta-grid of gradable measure adjectives like *tall*, not in non-gradable ones like *recursive*.[12] For instance, the lexical entry of these two adjectives could be:

(23) *tall*, +V +N, <1, G>
recursive, +V +N, <1>

where <1> is the thematic argument to be discharged by the subject that *tall* and *recursive* are going to be predicated of. G is the degree argument position. In *too tall* the Deg^0 *too* Theta-binds the G argument of *tall* (Zwarts 1992, p.146):[13]

(24) $[_{degp}\ too_i\ [_{ap}\ tall_{<1,Gi>}\ ]]$

$[_{degp}\ so_i\ [_{ap}\ beautiful_{<1,Gi>}\ ]]$

Zwarts assumes that a gradable adjectival predicate on its own (as in *John is tall*) involves an empty degree operator: otherwise, the G argument of *tall* would not be bound, in violation of the Theta-criterium. In this thesis I adopt this empty Deg^0:

---

11 Theta-binding "relates the open referential argument position of a lexical predicate to an operator, thus restricting the predicate's denotation" (Corver 1997a, p.130).

12 Zwarts (1992, p.140) distinguishes three categories of adjectives: gradables ones, subdivided into measure adjectives (cf. *(six feet) tall*) and non-measure adjectives (cf. *(*six UNITS) pretty*), and non-gradable ones (cf. *dead, recursive*).

Gradable measure adjectives have a Grade argument. Gradable non-measure adjectives can acquire it by type-shifting. The type-shift operation maps a property (*pretty*, type e_P) to the set of degrees (type $<e_D,t>$) that realizes it (ibid., p.145).

Non-gradable adjectives do not have the Grade argument and cannot undergo type-shifting to acquire it.

13 The analysis of degree elements as operators goes back to earlier work by Liberman (1974) and Rouveret (1978). Rouveret assumed that *si* `so' and *trop* `too' in French involve quantification over degrees and extents (ibid., p.175).

(25) DegP

Deg AP
∅

A
tall

Theta-binding by Deg^0 of the degree position in A^0 requires government of A^0 by the degree head. According to Corver, this requires movement of the adjectival head to a position closer to Deg^0 than the original position of A^0, because Q^0 would be an intervening governor. Hence, the adjective must move to Q^0 to establish the local relationship between Deg^0 and A^0 that is needed for Theta-binding.

If the adjectival head cannot move, e.g. in the *so*-pronominalization cases above, *much* can be inserted in English as a last resort (cf. (25b-c) below). Corver states that the argument position G normally associated with the adjective is now associated with the pro-form *so* (which he considers to be an AP that cannot undergo head movement) and that the "dummy adjectival quantifier *much*" (1997a, p.135) copies that argument position. Thus the required head-head relation between the argument G and the degree operator in Deg^0 is mediated by *much*. Corver assumes the following structures and binding relationships:

(26) a $[_{degp}$ too/so/as/how$_i$ $[_{qp}$ tall$_{<1,Gi>k}$ $[_{ap}$ t_k $]]]$
b * $[_{degp}$ too/so/as/how$_i$ $[_{qp}$ ∅ $[_{ap}$ so$_{<1,Gi>}$ $]]]$

c $[_{degp}$ too/so/as/how$_i$ $[_{qp}$ much$_{<Gi>}$ $[_{ap}$ so$_{<1,Gi>}$ $]]]$

(27) a $[_{degp}$ te $[_{qp}$ mooi$_i$ $[_{ap}$ t_i $]]]$
too beautiful
b * $[_{degp}$ te $[_{qp}$ veel $[_{ap}$ mooi $]]]$
too much beautiful

Insertion of *much* in the Q^0-position of example (25a) above is blocked for reasons of economy, whereas *much* is inserted in (25c) to avoid the ungrammaticality of (25b). Corver notes that head-movement is an operation that is applied throughout linguistic theory and therefore can be considered to be universally available. In contrast, insertion of *much* as in the *so*-pronominalization cases above is language-particular to (at least) English and Dutch. Hence, on the assumption that language-particular operations are more costly than universally available ones,

Corver claims that A^0-to-Q^0 movement is preferred over and blocks *much*-insertion.[14]

The ungrammaticality of (28) then, is accounted for by economy considerations:

(28) * $[_{degp}$ too $[_{qp}$ much $[_{ap}$ intelligent]]]

The above example will never occur, since A^0-to-Q^0-movement is considered less costly than *much* insertion, and hence *much*-insertion is blocked.

Next, let us consider comparatives. Recall that Corver (1994, 1997a) assumes that an item like *more* heads the quantifier phrase. He also adjusts Zwarts' (1992) analysis and assumes that a Q^0-head as well as a Deg^0-head can Theta-bind a degree argument of an adjective. A lexicalized Q^0-head is close enough to the adjectival head to govern it and discharge the argument position G. This means that neither A^0-to-Q^0 movement nor *much*-insertion are needed:

(29) a $[_{qp}$ more/less$_i$ $[_{ap}$ intelligent$_{<1,Gi>}$]]

b $[_{qp}$ more/less$_i$ $[_{ap}$ so$_{<1,Gi>}$]]

The Dutch counterparts are:

(30) a $[_{qp}$ meer $[_{ap}$ gespecialiseerd]]
more specialized

b Jan is dat$_i$ $[_{qp}$ meer $[_{ap}$ t$_i$]] (dan Piet)
J is that more _ (than P)

Note Corver's (1997a) assumption that there is no degree projection in comparatives. This might lead one to assume that examples like (31) below are grammatical, contrary to fact:

(31) * $[_{degp}$ so $[_{qp}$ more $[_{ap}$ beautiful]]]

---

[14] Chomsky (1995, p.348) concludes that in general the operation Merge should be preferred over (is less costly than) Attract/Move when possible. Since applying Merge amounts to inserting *much* in this case, Corver's (1997a) economy argument that A-to-Q-movement is preferred over *much*-insertion is turned around if he would adopt Chomsky's (1995) economy principles.

Corver argues that such examples are excluded because they involve vacuous quantification. Recall that he assumes that both the degree head and the quantifier head are operators that need to bind an argument position. In that case, then, (31) is out because there are two operators (viz. *so* and *more*) and only one adjective with an argument position to bind. The degree head *so* is superfluous, which leads to ungrammaticality.

3.4.1 *Much* as a dummy

An important aspect of Corver's (1997a) analysis is that the quantifier *much* that is used in *much*-support, is considered to be a dummy. Corver claims that there are two instances of *much* in the lexicon: a dummy *much* and a lexical *much*. Lexical *much* is generated as an adjectival head and has a Grade argument of its own that will have to be bound. Lexical *much* appears in degree phrases that function as modifier of e.g. another degree phrase, as in *too much too tall (for this sweater to even try it on)*. Dummy *much* can be inserted in Q^0 as a last resort and is claimed to copy someone else's Grade argument.[15]

In section 3.7.1 I will argue that *much* is not a dummy. The next subsection will present the incorrect predictions that Corver's system of hypotheses makes. One of these incorrect predictions stems from the dummy/ lexical *much* distinction.

3.4.2 Incorrect predictions

The degree phrase system proposed in Corver (1994, 1997) leads to a number of incorrect predictions.

First, recall that Corver (1997a) argues that examples like the following are excluded because they involve vacuous quantification; both Deg^0 and Q^0 have to bind an argument position, but there is only one argument position provided by the adjective:

(32) * $[_{degp}$ so $[_{qp}$ more $[_{ap}$ beautiful]]]

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[15] The argument can be bound by degree elements like *so* or *too*. However, since Corver (1997) claims that a quantifier head can also bind a Grade argument and that *more* is such a Q, his system wrongly predicts that * *more much* should be grammatical as well. See section 3.4.2 for discussion.

Interestingly, examples like the following are grammatical (even if one might need a context to interpret them, cf. section 3.6 as well):

(33) a John is even [**more** [*too* tall]] *for* this suit **than** Bill is
b ? Mary is [**less** [tall*er*]] *than* Bill (**than** John is)

In Corver's system they should be illegitimate, because *too tall* and *taller* do not provide a Grade argument for *more* and *less* to bind. That is, *more* and *less* should be vacuous operators in (33a,b), according to Corver's assumptions. His system can not predict the grammaticality of the examples.

Second, Corver (1997a) also discusses examples in which a degree phrase modifies another degree phrase. He argues that *much* in the modifying degree phrase is an instance of an adjectival quantifier *much*, "lexical *much*", and not an instance of the "dummy *much*" quantifier he claims is inserted in *so*-pronominalization. To the examples in (34) he assigns the structures in (35) (Corver 1997a, p.148):

(34) a John is [*as much* too tall]
b John is very tall, and Mary is [*too much* less so to allow her to play tennis with him]

(35) a $[_{degp}\ [_{degp}$ as $[_{qp}$ much$_i$ $[_{ap}$ t$_i$]]] $[_{deg'}$ too $[_{qp}$ tall$_i$ $[_{ap}$ t$_i$]]]]

b $[[_{qp}\ [_{degp}$ too $[_{qp}$ much$_i$ $[_{ap}$ t$_i$]]] $[_{q'}$ less $[_{ap}$ so]]] to allow....]

Corver claims that the "lexical *much*" in the (34) examples has a Grade argument of its own that needs to be bound by the degree heads *as* and *too*, respectively, and hence moves into the empty Q^0 of the QP in the modifying degree phrase.[16]

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[16] Corver assumes two types of structure:

(i) a $[_{degp}$ too $[_{qp}$ much $[_{ap}$ so]]]
b $[_{degp1}\ [_{degp2}$ too much] $[_{degp1}$ too tall]]

This raises the question whether Corver's (1997a) configuration for modification is correct. He assumes that a modifying degree phrase occurs in the specifier position of the phrase it modifies. One could also assume that the quantifier of the modifying degree phrase actually selects the modified degree phrase ($DegP_1$ in (i-b) above), in which case we would have the general pattern:

(ii) [degp [qp [xp]]]
where XP is (at least) AP, PP, DegP or NP

Corver mentiones this possibility with respect to cases like *too (much) different* (ibid., p. 151).

Although (ii) seems the more general, and hence an attractive, option, Corver shows that in the modification cases the degree phrase can be extracted from the overall constituent (cf. (iii-a)). This is not possible in the degree phrases that are assigned the structure in (i-b) (cf. (iii-b), Corver 1997, p.152):

What Corver does not mention, however, is that examples with *meer* `more' do not allow *veel* `much' at all. This is most obvious in cases where a degree phrase is modifying a prepositional phrase:

(36) a Piet zit meer (*veel) in de problemen dan ooit
P sits more (much) in the problems than ever
`Piet is more (*much) in trouble than ever'
b Piet zit teveel/ te diep in de problemen om...
P sits too-much/ too deep in the problems to
`Piet is too much/ too deeply in trouble to...'

If Corver is correct that *meer* `more' is a quantifier head and *veel* can be an adjectival predicate, he (incorrectly) predicts **meer veel* to be grammatical:

(37) * $[_{qp}$ meer$_i$ $[_{ap}$ veel$_{<1,Gi>}$]]

In (37), there is one A^0 with a Grade argument to be bound. Since *more* is a Q^0, according to Corver, that can bind the Grade argument, there is no cause for the ungrammaticality of (37) in his system. In addition, there is no reason in Corver's system why insertion of *veel* `much' in (36a) above should be illegitimate.[17]

These incorrect predictions may suggest two things. First, it could be that vacuous quantification is not the cause of the ungrammaticality of (32) above. Second, it could be that *-er* and *more* are not both instances of Q^0 heading the

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(iii) a How much$_i$ is he [t$_i$ taller than Bill] ?
b * How much$_i$ is he [t$_i$ tall] ?

At first sight, this argument seems to be invalid, since * *how much tall* (the counterpart of (iii-b) without movement) is ungrammatical in itself, even in echo-questions in which a WH-element does not move obligatorily.

However, the extractability of *how* and *much* together in (iii-a) clearly indicates that they form a constituent independently of *taller than Bill*, which is an argument in favour of a modification structure.

In addition, the structure in (ii) as applied to modificational degree phrases is an instance of the `head approach' to modification that was discussed in chapter 2. In the head approach, adverbs are considered to be heads that select the phrase they modify. Several arguments against this approach were presented in section 2.2, and the conclusion was that the head approach is incorrect.

I conclude here that the quantifier projecting the QP in (ib) does not select the phrase that is modified by it. I will adopt Corver's structure in (ib).

[17] The hypothesis that the PP *in de problemen* `in trouble' might provide a Grade argument that can be bound by *more* cannot be sustained. If that were the case, the PP would be selected by *more*, and could not be separated from it, contrary to fact:

(i) hij zit meer dan ooit in de problemen
he sits more than ever in the problems
`More than ever, he is in trouble'

quantifier phrase. In the next sections I will defend an alternative analysis, arguing that neither *more* nor the comparative morpheme *-er* are quantifiers (although *more* does in fact incorporate one).

3.5 *More* and *less* are composite forms

The data in section 3.3, provided by Corver (1994, 1997), lead me to an alternative analysis, in which *meer* `more' and *minder* `less' are composite forms. That is to say, *more* is the comparative form of *much* or *many* and *less* is the comparative form of *little* of *few* (cf. for example Bresnan 1973, Doetjes 1997). As such, *more* and *less* (and their Dutch counterparts, for that matter) are full degree phrases, consisting of a Deg^0 (viz. the bound morpheme *-er*) and an AP (e.g. *much*):[18,19]

(38) a $[_{degp}$ much$_i$-er $[_{qp}$ t$_i$]] --> $[_{degp}$ more $[_{qp}$ t]]
b $[_{degp}$ much$_i$-st $[_{qp}$ t$_i$]] --> $[_{degp}$ most $[_{qp}$ t]]
c $[_{degp}$ little$_i$-er $[_{qp}$ t$_i$]] --> $[_{degp}$ less $[_{qp}$ t]]
d $[_{degp}$ little$_i$-st $[_{qp}$ t$_i$]] --> $[_{degp}$ least $[_{qp}$ t]]

The idea that Q^0 is associated with Deg^0 incorporates the suggestion of Bresnan (1973) that *more* is derived from *-er* + *much* or *-er* + *many*, and *less* from *-er* +

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[18] *Much*, *many*, *little* and *few* (and *veel* and *weinig* in Dutch) can be considered adjectival quantifiers, or quantificational adjectives. As such, we can choose to consider them as QPs or APs. As was mentioned in footnote 2, Abney (1987, p.301) distinguished adjectives, adverbs and quantifiers from each other by their values for the features [+/-Q] and [+/-Adv] only.

If we choose to consider them as APs, a degree head uniformly c-selects for APs in Dutch and English: *so much* and *so beautiful* would both involve a degree head selecting an AP complement. However, we will see Zapotec examples below, in which even nouns and verbs appear to move to a comparative degree head.

In view of the observation that degree heads cross-linguistically do not uniformly c-select for just one syntactic category anyway, I consider *much* to head a quantifier phrase with certain adjectival characteristics. One of these characteristics is that it may carry inflection in prenominal positions:

(i) a veel**_** boeken
many books
b de vel**e** boeken
the many books

[19] Depending on the theoretical framework, (a) the quantifier moves up to pick up the degree morpheme, (b) *more* etc. are inserted as such from the lexicon and the degree morpheme represents a feature that needs to be checked in the degree head, or (c) the quantificational feature moves up to the degree feature and then lexical insertion (at Spell Out) gives us *more* instead of *much*.

little.[20,21] Galant (in prep.) notes that movement to the degree head (of a quantifier or of other heads) is clearly attested in Zapotec comparatives, in which a quantifier can be overtly combined with the comparative morpheme *-ru'*. Note that different noun classes require different quantifiers (Galant, in prep.):[22]

(39) a COUNT NOUN:
Zyeeinny-ru' liebr bzi:i Rodrieg cah Liieb
many-ER book bought Rodrieg than Liieb
`Rodrigo bought more books than Felipe'

b MASS NOUN (≠ LIQUID, ≠ GAS):
Zyeeinny-ru' mwuully bei:nny Rodrieg gann cah Liieb
much-ER money made Rodrieg earn than Liieb
`Rodrigo earned more money than Felipe'

c MASS NOUN (LIQUID OR GAS):
Zi:lly-ru' bien gwe' Rodrieg cah Liieb
much-ER wine drank Rodrieg than Liieb
`Rodrigo drank more wine than Felipe'

---

20 Corver (1997b) mentions this alternative analysis in a footnote (fn. 24), but argues that in that case it is unclear why a combination of the non-comparative form of the quantifier *veel* `much/many' or *weinig* `little/few' and an adjective is ungrammatical (cf. Jackendoff 1977 for English). Recall that he assumes that a quantifier head can Theta-bind the Grade argument of a gradable adjective:
(i) * $[_{qp}$ veel$_i$ $[_{ap}$ lang$_{<1,Gi>}$]] / * $[_{qp}$ much$_i$ $[_{ap}$ long$_{<1,Gi>}$]]
much long
If *much* is indeed a Q^0, capable of saturating the G position of *tall*, the ungrammaticality of (i) is unpredicted.

Doetjes (1997, p.106 ff.) argues that **much intelligent* is ungrammatical because it is blocked by the existence of *very intelligent*, which expresses almost the same meaning as *much A* would. She analyzes *very* as a Deg^0. The reason why selection of the adjective by *very* can block modification by *much* is that a degree head is highly specified for almost exclusively selecting APs, whereas *much* is underspecified in the sense that it is insensitive to the syntactic category of what it adjoins to. In Doetjes' words, *much* is the Elsewhere form. That is: apply a degree head like *very* with APs; elsewhere, one can use *much* to express about the same meaning.

Similarly, modification of an adjective by *more* (the underspecified Elsewhere form) is claimed to be blocked by the availability of a synthetic comparative with the degree head *-er* (cf. *taller* / **more tall*). In Zapotec, however, both forms cooccur (cf. footnote 22).

21 Doetjes (1997, p.98 and overview pp.103-104) assigns the same structures to *so much* and *more* as defended here. She considers *more* to be a complex degree quantifier (DQ), consisting of a degree head (the comparative morpheme) and an adjectival degree quantifier, *much*:
(i) a $[_{degp}$ so $[_{qp}$ much]]
b $[_{degp}$ -er $[_{qp}$ much]] --> $[_{degp}$ more $[_{qp}$ t]]
The adjectival degree quantifier *much* has a Grade argument position (following Zwarts 1992) that is bound by the degree head.

22 This language is spoken in a part of Mexico. The full name is San Lucas Quiaviní Zapotec.

Actually, Corver himself (1997a, p. 130, fn. 17) notes that *more* is the comparative form of *much*, arguing that it provides evidence for the adjectival nature of *much* (and of *many*, *few* etc.). In Dutch as well, the comparative form of the quantifier *veel* `much/ many' is known to be *meer* `more' (cf. Van Dale dictionary 1984), which is also used in periphrastic comparative constructions. Similarly, *minder* `less' is the comparative form of *weinig* `little/ few'. All this supports the assumption that the quantifier head is associated with the degree head *-er* / *-st* in syntax to form the English *more* and *most* or the Dutch counterpart *meer* and *meest*.

Similar to the movement of the quantifier to combine with the degree head in *more*, an adjective can also combine with the comparative and superlative degree morphemes *-er* / *-st*. Consider adjectives with synthetic comparative and superlative forms. The following examples show that adjectives are also able to combine with the degree morphemes:

(40) a interessant/ interessanter/ interessantst
interesting/ interesting-er/ interesting-st
b mooi/ mooier/ mooist
beautiful/ beautiful-er/ beautiful-st

(41) a quick/ quicker/ quickest
b fast/ faster/ fastest

(42) a $[_{degp}$ -er $[_{ap}$ fast]] --> $[_{degp}$ fast$_i$-er $[_{ap}$ t$_i$]] --> *faster*

b $[_{degp}$ -er $[_{ap}$ mooi]] --> $[_{degp}$ mooi$_i$-er $[_{ap}$ t$_i$]] --> *mooier*

(43) a $[_{degp}$ -st $[_{ap}$ fast]] --> $[_{degp}$ fast$_i$-st $[_{ap}$ t$_i$]] --> *fastest*

b $[_{degp}$ -st $[_{ap}$ mooi]] --> $[_{degp}$ mooi$_i$-st $[_{ap}$ t$_i$]] --> *mooist*

Interestingly, Zapotec allows predicates of more syntactic categories to be combined with the comparative *-ru'* morpheme. Predicatives that can move to Deg^0 include adjectives, adverbs and, surprisingly from a Dutch or English point of view, verbs and nouns:[23]

[23] In all these cases, it is also possible to combine the -ER morpheme with *Maa(z)* (which could be taken from Spanish *más* `???more/ -ER', but the status of which is not entirely clear). This yields the periphrastic comparatives *Maa(z)-ru' contenn* `more content', *Maa(z)-ru' nnsehes* `more fast', *Maa(z)-ru' utaisy* `more slept' and *Maa(z)-ru' mni'ny* `more child' (cf. Galant in prep., p.7-8).

(44) Contenn-ru' nu' Jwany cah Useh
content-ER is Jwany than Useh
`Juan is more content than José'
(45) Nnsehes-ru' rzh:u:nny Rodrieg cah Liieb
fast-ER runs Rodrieg than Liieb
`Rodriego runs faster than Felipe'
(46) Utaisy-ru' Rodrieg cah Liieb
slept-ER Rodrieg than Liieb
`Rodrigo slept more than Felipe'
(47) Mni'ny-ru' Jwany cah Useh
child-ER Jwany than Useh
`Juan is more of a child than José'

Apparently, the choice of which lexical categories can be selected by a degree head is a language specific matter. In Zapotec the comparative morpheme can select quantifiers, adjectives, nouns and verbs that move up to it; in Dutch and English only adjectives, some adverbs (e.g. *vaak* `often', *vaker*, *vaakst*) and quantifiers like *much* or *little* move to the comparative degree head.

I conclude that the comparative and superlative morphemes *-er*/ *-st* represent degree heads. This implies that *more/ most* are not quantifiers, as Corver (1994, 1997) suggests, but composite forms representing the combination of a degree head and a quantificational head: *more*, *most*, *less* and *least* are full degree phrases.[24]

Before reanalysing the data in section 3.3, let us first look at degree phrases in environments other than AP. In all these environments, *more* occurs on its own, and degree heads like *too* team up with *much* or other APs to form a full degree phrase before combining with elements of other syntactic category. At the end of the next section I will argue that both *more* etc. and *too much* (or degree phrases with other heads) are adjuncts.

3.6 *More* and *too much* as adjuncts in environments other than AP

[24] Doetjes, Van der Koot & Neeleman (1998) also consider *more* to be a full XP. They do not go into its syntactic category. In the semantics they provide, *more* and *too* have an identical meaning. I will argue in the appendix that this is incorrect, due to the complex nature of *more*.

In the previous section I analyzed *more*, *most*, *less* and *least* as full degree phrases with an incorporated quantifier like *much* or *little*. This explains why they never cooccur with *much* in any environment in which degree heads like *so*, *too* or *as* select *much* (or other intensifiers in Dutch). Both *too much* and *more* (to provide an example of both groups) are degree phrases. Below we will see that they adjoin to the phrases that they modify.

Apart from the adjectival and nominal environments that were discussed by Corver (1994, 1997) (cf. *more/ too intelligent* and *more/ too many books*, respectively), *more* and *too much* and the other members of their respective groups also occur as modifiers of prepositional phrases, degree phrases and indefinite noun phrases. In addition, they occur as modifiers in the verbal domain. This section presents examples of these environments and claim that *more* etc. and *too much* etc. are adjoined to the phrases they modify.

First, consider again the noun phrase examples from section 3.3:

(48) a hij heeft zoveel boeken dat...
he has so-many books that
b hij heeft er$_i$ zoveel t$_i$ dat...
he has there so many that
`He has so many of them that...'
c hij heeft meer (*veel) boeken dan ik
he has more (many) books than I
d hij heeft er$_i$ meer (*veel) t$_i$ dan ik
he has there more (many) than I
`He has more of them than I do'

(49) a Janna heeft er$_i$ [een stuk minder t$_i$ dan Piet]
Janna has there a lot less t than Piet
`Janna has a lot less of them than Piet'
b Janna heeft er$_i$ [meer t$_i$ dan Piet]
Janna has there more t than Piet
c Janna heeft er$_i$ [meer dan genoeg t$_i$]
Janna has there more than enough t
`Janna has more than enough of them'

(49') a Janna heeft er$_i$ [zoveel t$_i$]
Janna has there so-many
`Janna has so many of them'
b Janna heeft er$_i$ [te veel t$_i$]
Janna has there too many t
`Janna has too many of them'

c Janna heeft er$_i$ [evenveel t$_i$]
Janna has there as-many
d Janna heeft er$_i$ [hoeveel t$_i$] ?
Janna has there how-many

In addition, Doetjes, Neeleman & Van der Koot (DNK, 1998) provide examples of *more* as modifiers of noun phrases that have gradient properties. In contrast, degree heads like *too*, *as* cannot select these noun phrases. The latter can, however, select *much* to form a full degree phrase and then modify the noun phrase by adjoining to it (DNK 1998, p.6 & p.12, exx. (13),(14) and (31)):

(50) a He is [$_{dp}$ more [$_{dp}$ a linguist]] than a psychologist
b He is [$_{dp}$ less [$_{dp}$ a typical Hollywood celebrity]] than any of his neighbours
c He is [$_{dp}$ [$_{dp}$ man] enough] for Sue

(51) a * He is [$_{degp}$ too [$_{dp}$ a scientist]] to care about such problems
b * He is [$_{degp}$ as [$_{dp}$ a typical Hollywood celebrity]] as Robin W.
c * It's [$_{degp}$ very [$_{dp}$ time for coffee]] now
d * I wonder [$_{degp}$ how [$_{dp}$ man]]$_i$ he really is t$_i$

(52) a He is [$_{dp}$ [$_{degp}$ too much] [$_{dp}$ a scientist]] to care about such problems
b He is [$_{dp}$ [$_{degp}$ as much] [$_{dp}$ a typical Hollywood celebrity]] as Robin W.
c It's [$_{dp}$ [$_{degp}$ very much] [$_{dp}$ time for coffee]] now
d I wonder [$_{dp}$ [$_{degp}$ how much] [$_{dp}$ man]]$_i$ he really is t$_i$

Second, Doetjes, Neeleman & Van der Koot (1998) provide examples of *more* as a modifier in the verbal domain. Again, the degree heads *too*, *as* etc. have to select for instance *much* to form a DegP that can function as a modifier (DNK 1998, p.6 & p.12-13, exx. (15),(16) and (32)):[25]

(53) a He [$_{vp}$ [$_{vp}$ likes venison] more] than his family does
b He [$_{vp}$ [$_{vp}$ lives like a celebrity] less] than he would like to
c He [$_{vp}$ [$_{vp}$ loves Mary] enough] to marry her

(54) a * He [$_{degp}$ too [$_{vp}$ likes venison]] for his own good
b * He [$_{degp}$ as [$_{vp}$ lives like a typical Hollywood celebrity]] as Robin W.
c * He [$_{degp}$ very [$_{vp}$ loves Mary]] indeed

[25] Doetjes, Neeleman & Van der Koot (1998) follow Doetjes (1997) in analyzing the modifiers as right-adjoined to VP. I present their structures here for the sake of illustration.

(55) a He [$_{vp}$ [$_{vp}$ likes venison][$_{degp}$ too much]] for his own good
b He [$_{vp}$ [$_{vp}$ lives like a typical Hollywood celebrity] [$_{degp}$ as much]] as Robin W.
c He [$_{vp}$ [$_{vp}$ loves Mary] [$_{degp}$ very much]] indeed

Third, consider examples in which a degree phrase is a modifier of a prepositional phrase. Again, degree items like *zo* `so', *te* `too' etc. must select *veel* `much' or other intensifiers like *diep* `deep(ly)' to form a degree phrase. *Meer* `more' or other synthetic comparatives like *dieper* `deeper' are full degree phrases and occur as modifiers by themselves:[26]

(56) a Piet zit [meer (*veel) [in de problemen]] dan ooit
Piet sits more much in the problems than ever
`Piet is more (*much) in trouble than ever'

b Piet zit [dieper [in de problemen]] dan ooit
Piet sits deeper in the problems than ever
`Piet finds himself more deeply in trouble than ever'

(57) a Piet zit [te *(veel) [in de problemen]] om...
Piet sits too much in the problems to
`Piet is too *(much) in trouble to...'

b Piet zit [te diep [in de problemen]] om...
Piet sits too deep in the problems to
`Piet is too deeply in trouble to...'

(58) a He is [$_{pp}$ more [$_{pp}$ on drugs]] than any of his friends
b He is [$_{pp}$ less [$_{pp}$ into syntax]] than he was before
c He is [$_{pp}$ enough [$_{pp}$ over the limit]] to be arrested

(59) a * He is [$_{degp}$ too [$_{pp}$ on drugs]] indeed
b * I wonder [$_{degp}$ how [$_{pp}$ into syntax]]$_i$ he really is t_i
c * He is [$_{degp}$ as [$_{pp}$ over the limit]] as Bill

(60) a He is [$_{pp}$ [$_{degp}$ too much] [$_{pp}$ under scrutiny]] to be elected this time
b He is [$_{pp}$ [$_{degp}$ as much] [$_{pp}$ over the limit]] as Bill
c He is [$_{pp}$ [$_{degp}$ very much] [$_{pp}$ on drugs]] indeed
d I wonder [$_{pp}$ [$_{degp}$ how much] [$_{pp}$ into syntax]]$_i$ he really is t_i
(58) taken and (59) & (60) adapted from Doetjes, Neeleman & Van der Koot (1998)

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[26] It is important to note that not only *veel* `much', but also *erg* `very', *zeer* `very', *diep* `deeply' etc. can support the degree head. For discussion of the significance of this observation see section 3.7.1.

Fourth, consider the following examples, in which a degree phrase is modifying another degree phrase:[27]

(61) a Sneeuwwitje is [zoveel [mooier dan haar stiefmoeder]] dat deze haar wil laten vermoorden
Snowwhite is so-much beautiful-er than her stepmother that this-one her want let kill
`Snowwhite is so much more beautiful than her stepmother that the latter wants to have her killed'

a' Sneeuwwitje is [mooier dan haar stiefmoeder]; zóveel (mooier dan haar stiefmoeder) dat deze haar wil laten vermoorden
Snowwhite is beautiful-er than her stepmother; so-much (beautiful-er than her stepmother) that this-one her want let kill
`Snowwhite is more beautiful than her stepmother; so much so that the latter wants to have her killed'

b Sneeuwwitje is [zoveel [te mooi voor haar eigen bestwil]] dat ze voor haar leven moet vrezen
Snowwhite is so-much too beautiful for her own well-being that she for her life must fear
`Snowwhite is so much too beautiful for her own good that she has to fear for her life'

b' Sneeuwwitje is [te mooi voor haar eigen bestwil]; zóveel (te mooi voor haar eigen bestwil) dat ze voor haar leven moet vrezen
Snowwhite is too beautiful for her own well-being; so much (too beautiful for her own well-being) that she for her life must fear
`Snowwhite is too beautiful for her own good; so much so that she has to fear for her life'

In these examples as well, the degree head *zo* `so' selects *veel* `much'. Notice in addition that in the (61a') and (61b') examples, *so*-pronominalization occurs in the English translations: *so* is a proform for the degree phrases here.

Now look at *more* or *less* modifying another degree phrase. First consider an example in which they modify another comparative. Such examples are a little awkward, but judgments can still be checked. Consider a scenario in which John is taller than Mary, but Janna is even taller than John. In that case, Janna is `more

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27 Bresnan (1973, p. 339) and Andrews (1975, p.164) provide examples like the following:
(i) a Mary doesn't have **as** many too many [marbles] **as** Jane
b **As** many *more* people *than* I invited came to the party **as** you predicted

[taller than Mary]' than John is. In other words, the extent to which Janna is taller than Mary is greater than the extent to which John is taller than Mary:[28]

(62) a ? John is taller than Mary, but Janna is [$_{degp}$ more [$_{degp}$ taller]] than Mary than John.
b * Janna is [$_{degp}$ more much [$_{degp}$ taller than Mary than John]]

Although I agree that one needs some time to process example (62a), example (62b) strikes me as straightforwardly ungrammatical, due to the presence of *much*. Doetjes, Neeleman & Van der Koot (1998, p.7) provide a type of example in which *less* modifies a degree phrase headed by *too*, instead of another comparative:

(63) John is too tall for this sweater, and Bill is too tall for it as well. But it seems to me that John is [$_{degp}$ less [$_{degp}$ too tall for this sweater]] than Bill

Again, it is ungrammatical to insert *much*: *less (*much) too tall*.

Summing up, in all syntactic environments except AP, *more*, *less* etc. occur on their own, whereas *too*, *as* etc. team up with *much* or another intensifier or adjectival predicate.

In chapter 2 I argued that adjunction is the syntactic configuration that expresses modification. Therefore, I predict that *more* and *too much* as modifiers are adjoined to the phrase they modify. Doetjes, Neeleman & Van der Koot provide the following WH-extraction data to support the hypothesis that a degree phrase modifying a PP, DP, VP or indeed the proform *so* in Corver's (1997) examples is adjoined to the phrase it modifies (DNK, p. 13, exx. (33) and (35)):

(64) a No one knows [$_{degp}$ how much]$_i$ he really is [$_{pp}$ t$_i$ [$_{pp}$ on drugs]]
b They call him King of the Jungle, but only the size of his bowie-knife will tell [$_{degp}$ how much]$_i$ he really is [$_{dp}$ t$_i$ [$_{dp}$ King of the Jungle]]
c He is seen by many as the typical husband of a celebrity, but only the size of the divorce settlement will tell [$_{degp}$ how much]$_i$ he really is [$_{dp}$ t$_i$ [$_{dp}$ the typical husband of a celebrity]]
d No one knows [$_{degp}$ how much]$_i$ he really [$_{vp}$ t$_i$ [$_{vp}$ lives like a celebrity]]

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[28] In section 3.4.2 we already saw that the following examples constitute a problem for Corver's (1994, 1997) analysis, which incorrectly predicts that they are ungrammatical:
(i) a John is **more** *too* tall *for* this suit **than** Bill is
b Mary is **less** tall*er than* Bill (**than** John)

(65) a They say John is very fond of Mary, but [$_{degp}$ how much]$_i$ he really is [$_{xp}$ t_i [$_{xp}$ so]] is unclear to me
a They say he is on drugs, but [$_{degp}$ how much]$_i$ he really is [$_{xp}$ t_i [$_{xp}$ so]] no one knows
b They call him King of the Jungle, but only the size of his bowie-knife will tell [$_{degp}$ how much]$_i$ he really is [$_{xp}$ t_i [$_{xp}$ so]]
c He is seen by many as the typical husband of a celebrity, but only the size of the divorce settlement will tell [$_{degp}$ how much]$_i$ he really is [$_{xp}$ t_i [$_{xp}$ so]]
d They say he lives like a celebrity, but no one knows [$_{degp}$ how much]$_i$ he really does [$_{vp}$ t_i [$_{vp}$ so]]

Evidence that *more* is an adjunct is more intricate. It is based on data in which a prepositional phrase associated with an adjective can intervene between *more* and the adjective (DNK 1998, p.9, ex.(23)):[29]

(66) a Hij is [[meer] [afhankelijk van zijn vader] dan ik dacht
he is more dependent of his father than I thought
`He is more dependent on his father than I thought'
b Hij is [[van zijn vader]$_i$ [[meer] afhankelijk t_i]]] dan ik dacht
c Hij is [[meer] [[van zijn vader]$_i$ afhankelijk t_i]]] dan ik dacht

Examples (67)-(66) show that the DegP *too much* also allows the PP to intervene, in contrast to the Deg^0 *too* by itself, which selects the AP *afhankelijk* `dependent':[30]

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[29] For the sake of illustration I will adopt the assumption in Doetjes, Neeleman & Van der Koot (1998) that the PP *van zijn vader* `on his father' as wel as the DegP *meer* `more' is adjoined to the projection of the adjective *afhankelijk* `dependent'.

[30] Interestingly, *zo* `so' behaves like a Deg^0 in some, but like a DegP in other cases:
(i) a te *(veel) boeken / zo *(veel) boeken
too many books / so many books
b te (*veel) mooi / zo (*veel) mooi
too much beautiful / so much beautiful
c (*te veel) zo mooi / (zo veel) te mooi
too much too beautiful / so much too beautiful
c te *(diep) in de problemen / zo (diep) in de problemen
too deeply in the problems / so deeply in the problems
d te (*van zijn vader) afhankelijk / zo (van zijn vader) afhankelijk
too of his father dependent / so of his father dependent
e * te 'n man / zo'n man
too a man / so a man (`such a man')

(67) a Hij is [[te veel] [afhankelijk van zijn vader]] om zelfstandig te kunnen beslissen
he is too much dependent of his father for independently to can decide
`He is too much dependent on his father to be able to decide on his own'

b Hij is [[van zijn vader]$_i$ [[te veel] afhankelijk t$_i$]]] om...
c Hij is [[te veel] [[van zijn vader]$_i$ afhankelijk t$_i$]]] om...

(68) a Hij is [te [afhankelijk van zijn vader]] om zelfstandig te kunnen beslissen
he is too dependent of his father for independently to can decide
`He is too dependent on his father to be able to decide on his own'

b Hij is [[van zijn vader]$_i$ [te [afhankelijk t$_i$]]] om...
c * Hij is [te [[van zijn vader]$_i$ [afhankelijk t$_i$]]] om...

Adapting data like the ones in (64) and (65), we see that *more* can be pied-piped by the WH-degree phrase *hoeveel* `how much'. In the following examples, *aanmerkelijk* `considerably' modifies (and is adjoined to) *meer* `more':

(69) a Ze zeggen dat hij [[aanmerkelijk meer] [aan de drugs]] is dan Maria, maar [hoeveel meer]$_i$ hij werkelijk [t$_i$ [aan de drugs]] is weet niemand
they say that he considerably more on the drugs is than Maria but how-much more he really on the drugs is knows nobody
`They say that he's considerably more on drugs than Maria, but how much more he really is on drugs nobody knows'

b Ze zeggen dat hij [[aanmerkelijk meer] [als een beroemdheid leeft]] dan Sean C., maar [hoeveel meer]$_i$ hij werkelijk [t$_i$ [als een beroemdheid leeft]] is nog maar de vraag
they say that he considerably more like a celebrity lives than Sean C. but how-much more he really like a celebrity lives is still but the question
`They say he lives like a celebrity considerably more than Sean C., but how much more he really lives like a celebrity is questionable'

(70) Hij is [[aanmerkelijk meer] [[van zijn vader]$_i$ [afhankelijk t$_i$]]] dan Janna, maar [hoeveel meer]$_k$ hij [t$_k$ [[van zijn vader$_i$] afhankelijk$_i$ t]]] is weet niemand
he is considerably more of his father dependent than Janna but how-much more he t$_k$ of his father dependent is knows nobody
`He is considerably more dependent on is father than Janna is, but how much more he is dependent on his father, nobody knows'

These extraction data support the claim that *more*, as well degree phrases like *too much*, adjoins to the phrase it modifies.

The next section will address the question whether *much* in *too much so* or in e.g. *too much too tall* is a dummy.

3.7 *Much* as a dummy ?

Corver (1994, 1997), Doetjes (1997) and Doetjes, Neeleman & Van der Koot (1998) all claim that *much* in *too much so* is a dummy. In the next subsection I will argue that this is incorrect.

In Corver's system, *much* in *too much so* is inserted to function as an intermediary between a degree operator and the proform *so*. It copies the Grade argument that Corver claims is associated with the proform *so* in order to avoid vacuous quantification by *too*. In contrast, he claims that *much* in *too much too tall* is a full lexical *much* that has its own Grade argument.

Doetjes, Neeleman & Van der Koot (1998) argue that *much* in both *too much so* and *too much too tall* is a dummy. They claim that the semantics of *as much on drugs* is completely parallel to that of an example like *as beautiful*: in other words, they claim that *much* in *as much on drugs* does not contribute any semantics of its own.[31] As such, dummy *much* can be introduced into syntax to satisfy the c-selection properties of the degree head without satisfying its s-selection properties.

For example, whenever a Deg^0 like *too* is going to be merged with a phrase that is not an AP, for instance the PP *on drugs*, we can insert dummy *much* as the complement of Deg^0, forming the full DegP *[too much]*. This DegP, then, adjoins to the prepositional phrase in question, yielding $[_{pp}$ *[too much]* $[_{pp}$ *on drugs]]*. The authors assume that the c-selection properties of *too* are satisfied by dummy *much*, whereas the s-selection properties of the degree head are satisfied by the phrase that is modified by the degree phrase, the PP *on drugs*.

In the *so*-pronominalization cases (e.g. *too *(much) so*) that prompted Corver's (1994, 1997) analysis, Doetjes, Neeleman & Van der Koot (1998) assume that the degree phrase *too much* adjoins to the projection of *so*, just like it adjoins to a PP. They argue (correctly in my view) that *so* is a proform that can substitute numerous categories and hence is underspecified with respect to its categorial

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31 I will argue against this claim in section 3.7.1.

nature (ibid., p.4). As such, the proform *so* is not an AP like Corver (1994, 1997) suggested, and hence cannot satisfy the c-selectional properties of a Deg^0:

(71) This painting is very fragile,
a * perhaps a little [$_{degp}$ too [so]]
b perhaps a little [$_{xp}$ [$_{degp}$ too much] [$_{xp}$ so]]

I agree with the analysis of Doetjes, Neeleman & Van der Koot (1998) in this respect, but not with respect to their position that *much* is a dummy. In section 3.7.1 I will argue that *much* does have a semantics of its own, in contrast to their claim that it does not contribute any meaning to the phrase. This is one of the arguments against the position that *much* is a dummy in both the *too much so* and *too much too tall* cases.

3.7.1 *Much* is not a dummy

In this subsection I argue that *much* in *too much so* is not a dummy. There are three arguments against *much* as a dummy.

First, items other than *much* can `support' degree heads. If *much*, or its Dutch counterpart *veel*, would indeed be a dummy element just copying a Grade argument as Corver (1997a) claims, we would not expect other items to fulfil the same function. Instead of *te veel* `too much' it is also possible to use: *te diep* `too deeply', *te erg* `too very' or *te zeer* `too very'. Actually, Corver (1990, pp.227-230) provides an extensive paradigm of other modifiers that can be left behind in extraction environments:[32]

(72) a John is afraid of Bill. In fact [too terribly so] to be able to look him in the eye.
b John was short of funds, but I don't know [how badly so]

[32] Examples adapted from Corver (1990). I would like to thank Laurie Stowe and Tim Stowell for their judgments.

c John is related to Mary, but not [too closely _] to prevend them from marrying each other
d Mary is known around Europe, but still not [as widely _] as she would like
e This house is insured, though not [too well _]

(73) a Janna is bang voor de zee. Zelfs [zo erg _] dat ze niet eens in Amsterdam wil wonen
Janna is afraid of the sea. Even so very _ that she not even in Amsterdam wants live
`Janna is afraid of the sea. Even [so much so] that she doesn't even want to live in Amsterdam'
b Marie is krap bij kas, maar [hoe krap _] weet ik niet
Marie is tight by cash but how tight know I not
cf. `John was short of cash, but I don't know how short _ '

c John is verwant aan Marie, maar niet [zo nauw _] dat ze niet met elkaar kunnen trouwen
John is related with Marie but not so closely that they not with each-other can marry
`John and Mary are related, but so closely that they cannot marry each other'
d Peter is bekend met virusziekten, maar [hoe goed _] weet ik niet
Peter is known with virus-diseases but how well _ know I not
`Peter knows about viral diseases, but how much he knows about them I don't know'
e Dit huis is wel verzekerd, maar niet [zo goed _]
this house is PRT insured but not so well
`This house is insured, but not very wel'

(74) a Janna is bang voor spinnen. Ze is dat$_i$ zelfs [zo zeer $_i$t] dat ze ook kleintjes niet uit haar kamer durft weg te halen
Janna is afraid of spiders. *she is that even so very t that she also small-ones not out her room dares away to take*
`Janna is afraid of spiders. In fact, so much so, that she dare not remove even small ones from her room'

(75) a Wie is 't [even zeer/ even erg _ als Marie]?
who is it as very/ as very as Marie
`Who is it as badly as Marie?'
b Wie is 't [hoe erg _]?
who is it how very
`Who is it how badly?'

c Jan is 't [zo zeer _] dat....
Jan is it so very that
`Jan is it so badly that...'

One can hardly claim that *terribly* and *badly* in *too terribly so* and *how badly so* are dummy quantifiers. Since they appear in the same paradigm as *much*, it is highly unlikely that the latter is a dummy.

The second reason why *much* in *so much so* cannot be a dummy, is that it can be modified. It is entirely unexpected for a dummy element to be modified:

(76) a John is afraid of spiders. In fact, [so much so] that...
b John is afraid of spiders. In fact, [so terribly much so] that...

(77) a Hij heeft er [zo vreselijk veel _]
he has there so terribly much
`He has such an awful lot of them'

b [$_{degp}$ zo [$_{qp}$ [$_{advp}$ vreselijk] [$_{qp}$ veel [_]]]]
c or: [$_{qp}$ [$_{degp}$ zo [$_{advp}$ vreselijk]] [$_{qp}$ veel [_]]]

Note that it does not matter which of the structures in (77b,c) is the correct one: in either one *veel* is being modified.

The third reason why *much* is not a dummy is that it can modify certain degree phrases on its own:[33]

(78) a much too tall for this sweater
b much taller than Bill
c much more interesting than this record
d much less trivial than it seems

Before going into the significance of these examples, we should note that Corver (1997a, p.147) argues that *much* in *too much so* is a dummy, because by itself it cannot cooccur with the proform *so*. He gives the following examples:

(79) a*? This story is interesting, [*much so*] I think
b*? John's story is exciting, [*much so*] I believe

[33] In the appendix to this chapter I will expand the semantic analysis of Doetjes, Neeleman & Van der Koot (1998) such that it represents the contribution of *much*. I propose there that *much* can modify those degree phrases of which the head invokes a reference point and an orientation.

c *? John is intelligent; as a matter of fact, Sue is [*much so*] too

Similarly, Doetjes, Neeleman & Van der Koot (1998) state that *much* in e.g. *too much on drugs* is a dummy, because its lexical variant cannot modify the PP on its own:

(80) a * He is much on drugs

However, Ernst (1984) does provide such examples in his discussion of the distribution of *much* as a modifier (ibid., pp.171-177). He notes that *much* by itself in postverbal position is most natural in negative, conditional and interrogative sentences (ibid., p.171):

(81) a * He goes there much
b He doesn't go there much
c Does he go there much?
d If he goes there much, he must be crazy

Much as an adverbial that precedes its modifiee requires that this modifiee has a comparative or equative feel to it.[34] Ernst provides the following examples that are interesting here. In these examples *much* modifies an adjective or a prepositional phrase (ibid., pp.172-174):

(82) a George's writing is [much [inferior to Dan's]]
b George's writing is [much [preferable]]
c George's writing is [much [improved]]
d * George's writing is [much [good]]

(83) a George's writing is [much [above the standard]]
b He was demanding a level of commitment [much [beyond our ability to provide it]]
c He was demanding a level of commitment [much [above anything we'd been asked for before]]

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[34] The following examples seem to be exceptions to this observation (Ernst 1984, p.174):
(i) a I'm [much [in favour of that law]]
b Alice taught home economics [much [against her will]]

Of course, when someone makes a distinction between a dummy element *much* and a lexical element *much*, the examples in (78)-(83) may be claimed to be instances of the lexical variant. Interestingly, however, the interpretation of complex phrases like (84b-c) appears to expand the meaning of (84a):

(84) a You are <u>much</u> [too tall (for this sweater)]
b This sweater is <u>too much</u> [too small (for John)] for him to even try it on
c You are <u>as much</u> [too tall (for this sweater)] as John is

Someone can be too tall for a sweater to various degrees: a little too tall (but not very much so), much too tall, very much too tall, as much too tall as someone else is, so much too tall that there is no need to try it on, obviously too much too tall to even attempt to try it on, etc.

That is to say, the interpretation of *much* as a modifier (as in (78) and (84a)) is maintained in phrases where it is the complement of a degree head (as in (84b-c)). This implies that *much* in, for instance, *too much so* or *as much too tall* does contribute to the meaning of the entire phrase, which in turn implies that it is not a dummy. I conclude that *much* is definitely able to satisfy the s-selection properties of a degree head, contrary to the claim in Doetjes (1997) and Doetjes, Neeleman & Van der Koot (1998).

In section 3.9 I will extend Doetjes, Neeleman & Van der Koot's (1998) analysis of the interpretation of degree phrases in order to properly represent the meaning of *much* in (84).

3.8 Summary and conclusion

This chapter started with an interesting set of data, provided by Corver (1994, 1997): *more*, *less* and some other items behave different from degree heads like *too*, *as* and *so*.

Corver proposed an analysis in which there is a quantifier phrase in between Deg^0 and AP: *more*, *less* etc. are analysed as Q^0s. However, I argued in section 3.4.2 that his analysis yields incorrect predictions.

Section 3.5 showed that *more* is not a Q^0, but a full degree phrase headed by the comparative morpheme *-er*. In addition, I argued in section 3.7 that *much* is not a dummy, in contrast to the assumption in Corver (1997) and Doetjes,

Neeleman & Van der Koot (1998). *Much* does indeed contribute meaning to a phrase it occurs in and hence is able to satisfy the s-selectional properties of a degree head.

In short, I arrived at the following conclusions.

1 *te* `too', *even* `as', *hoe* `how' etc. are degree heads. They select AP and QP in Dutch and English;[35]

2 There is no quantifier phrase in between a degree head and its complement AP (contra Corver 1994, 1997);

3 *Meer* `more', *meest* `most', *minder* `less' and *minst* `least' are degree phrases: they consist of a Deg^0 and an incorporated quantifier like *veel* `much/many' or *weinig* `little', respectively;

4 The following structures were argued for:

a $[_{degp}$ too/as/how/∅ $[_{ap}$ beautiful]]
b $[_{degp}$ too/as/how/∅ $[_{qp}$ much]]

c $[_{degp}$ te/even/hoe $[_{ap}$ mooi]]
too/as/how *beautiful*
d $[_{degp}$ te/even/hoe $[_{qp}$ veel]]
too/as/how *much*

e $[_{degp}$ $tall_i$-er/-st $[_{ap}$ t_i]] --> $[_{degp}$ taller $[_{ap}$ t]]
f $[_{degp}$ $much_i$-er/-st $[_{qp}$ t_i]] --> $[_{degp}$ more $[_{qp}$ t]]

g $[_{degp}$ $lang_i$-er/-st $[_{ap}$ t_i]] --> $[_{degp}$ langer $[_{ap}$ t]]
taller
h $[_{degp}$ $veel_i$-er/-st $[_{qp}$ t_i]] --> $[_{degp}$ meer $[_{qp}$ t]]
more

5 Degree phrases, like *too much* and *more*, can function as modifiers of other degree phrases, prepositional phrases, noun phrases, parts of sentences or of the categorially underspecified proform *so*. They adjoin to the phrase they modify;

6 As such, the following structures were argued for:

a $[_{degp}$ $[_{degp}$ too much/ more] $[_{degp}$ too large]]

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35 Degree heads may also be combined with nouns and verbs in Zapotec. If *veel* `much/many' is considered an adjective, Deg^0s in Dutch and English only select AP.

b [$_{pp}$ [$_{degp}$ too much/ more] [$_{pp}$ on drugs]]
c [$_{dp}$ [$_{degp}$ too much/ more] [$_{dp}$ a linguist]]
d [$_{xp}$ [$_{degp}$ too much/ more] [$_{xp}$ so]]

7 *Much* in *too much so* or in *as much too tall* is not a dummy: its function can be fulfilled by other elements as well, it can be modified and it does contribute meaning to the interpretation of such examples.

APPENDIX The interpretation of degree phrases

Doetjes, Neeleman & Van der Koot (1998, p.17 ff.) provide an interesting semantic analysis for degree phrases.

They analyse a degree phrase like *too famous* or *too tall* as follows. For instance *famous* denotes an ordered set of degrees of fame. *Too* first introduces a contextually defined reference point on the scale of fame (dividing the scale into two subsets) and then selects the subset with the highest degrees of fame. From this selected subset a particular degree of fame is picked by existential quantification (which is an assumption I do not agree with, see below).

(85) *too tall* $\exists p [p \in UP(p_{ref}, \text{FAMOUS})]$

The property of *too* to select the subset with the higher degrees of fame is termed *"upward oriented"* by Doetjes, Neeleman & Van der Koot. It is represented by a function *UP*.[36]

The comparative morpheme *-er* also introduces a reference point and an orientation (and an existential quantifier).

(86) *tall-er* $\exists p [p \in UP(p_{ref}, \text{FAMOUS})]$

They assume that *more* has the same semantics as *-er* and *too* (ibid., p.45). I will come back to this in the section E of this appendix.

A degree operator like *as* only introduces a reference point (and an existential quantifier), but does not have an orientation: it does not select a subset of the set of degrees. Rather, it introduces a function *AT* which states that the selected degree is identified as the reference point:

(87) *as tall* $\exists p [p \in AT(p_{ref}, \text{FAMOUS})]$

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[36] Doetjes, Neeleman & Van der Koot (1998) introduce the function DOWN for the meaning of *less*. Later on (ibid. p.41), they propose that DOWN can be seen as UP(REVERSE) instead.

Since I argue that *less* in *less tall* is *little-er*, I only partly agree with this. Rather, the comparative morpheme in *less* has its normal orientation UP. Since it operates on the scale associated with the meaning of *little*, however, a greater degree of `litlle tallness' amounts to a smaller degree of tallness: *increasingly little* means *less and less*. This yields the interpretation that *less* has a downward orientation that is reversed with respect to the interpretation of *-er* itself.

In the following subsections I will briefly discuss the elements of the semantic analysis of Doetjes, Van der Koot (1998).

A The existential quantifier

Doetjes, Neeleman & Van der Koot (1998) propose that the degree operators introduce an existential quantifier, to account for the illformedness of stacked degree operators in (88):

(88) a * too taller
b * as too famous
c * more as high
d * too ten miles high

For instance, if a comparative morpheme introduces existential closure, *too* in (88a) cannot be combined with *taller*, because *taller* now denotes a single degree (by their claim) and *too* needs a set to operate on.[37]

However, in my view *taller than Mary* still denotes a set of degrees of tallness: if Mary is five feet tall, *taller than Mary* is still a set of degrees ranging from five feet something to e.g. seven feet. As such, I do not agree that all degree heads (or degree phrases like *more* or *less*) introduce an existential quantifier. Those degree phrases that have an orientation, or in other words, select a subset of degrees, do not introduce an existential quantifier. These degree operators are *too*, *so*, *more* and *less* (contrasting with *as*, which does not select a subset of degrees). Rather, I will adopt Zwarts' (1992, pp.143-147) assumption that the existential closure is provided by a Theme relation that attributes properties and degrees to objects. On the assumption that the copula *be* is a lexical expression of this Theme

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[37] To account for acceptable combinations like *too much too tall* and *less too tall*, the authors provide an ingenuous system: when two degree operators occur in a specifier-head configuration (where the modifiing phrase is the specifier), the existential quantifier of the head can be deleted under identity with that of its specifier to avoid vacuous quantification (ibid., p.35). Since I do not agree with their assumption that degree heads and degree phrases like *too* and *more* introduce an existential quantifier, I will not discuss their proposal except for the following observation.

If it were true that *too much too tall* is well-formed because the existential quantifier introduced by *too* in *too tall* can be deleted under identity with the one in *too tall*, the prediction is made that **too much as tall* is grammatical as well. That is, *as* is assumed to introduce an existential just like the one in *too* (ibid., p.21) and in the same configuration as *too much too tall* this quantifier should be able to delete under identity of the one introduced by *too*. Given the ungrammaticality of **too much as tall*, the deletion-under-identity-account for *too much too tall* does not hold, unless the authors would like to assume that the two phrases have a different internal structure.

relation (Zwarts 1992, p.147), the existential closure is introduced when the degree phrase occurs in the sentential domain, and not within the degree phrase itself (except when Deg^0 is *as*.

Looking at the ill-formed examples in (88), then, the explanation of Doetjes, Neeleman & Van der Koot cannot be maintained. Instead, I assume that the (88a-b) examples are out because a degree head cannot select another degree phrase. Example (88c) is ill-formed because *as high* does not denote a set of degrees and, hence, cannot be modified by *more* (cf. the discussion below of *much* as a modifier). Similarly, the modifier *ten miles* in (88d) identifies the degree of height as the one corresponding to ten miles. Thus, *ten miles high* does not denote a set and cannot be combined with the degree operator *too*. In addition, I will assume that *ten miles high* is a degree phrase: [$_{degp}$ ten miles [$_{degp}$ ∅ [$_{ap}$ high]]] (cf. below for discussion). As such, it does not match the c-selection properties of *too* either.

To conclude, degree operators like *too*, *so* or *-er* do not introduce existential quantification, in contrast to the assumption in Doetjes, Neeleman & Van der Koot (1998):

(89) *too tall* [p ∈ *UP*(p_{ref}, TALL)]

(90) *tall-er* [p ∈ *UP*(p_{ref}, TALL)]

(91) *as tall* [p ∈ *AT*(p_{ref}, TALL)]

B The reference point

The reference point is contextually determined and can be spelled out by a subclause or phrase that is dependent on the degree head involved.[38] This is the case in:

(92) Joan was as famous as Marilyn

[38] As noted by Tim Stowell (pc) the reference point need not per se be a point. It could also be an interval as well, in which case we can capture the intuition that *too short* and *too tall* are not adjacent parts of the scale of tallness.

Alternatively, in the case of *so*, which is a degree head with an upward orientation, the subset that is selected is referred to by a dependent subclause, as in the following result clause:

(93) Leonard is so famous that he's sick of it

In the case of *too* the selected subset is the one which is **not** expressed by the dependent clause:

(94) Leonard is too famous to enjoy it

In this case, *Leonard* does not enjoy being famous any longer: he is beyond those degrees of fame that are still enjoyable.[39]

In short, those degree operators that have dependent clauses or phrases are the ones that introduce a reference point (note that Doetjes, Neeleman & Van der Koot analyse *more* on a par with for instance the degree head *too*. I will argue against this position below):

(95) a John F. was $[_{degp}$ less $[_{degp} \varnothing$ famous]] than Marilyn
b John F. was $[_{degp}$ too $[_{ap}$ famous]] to have any privacy
c John F. was $[_{degp}$ as $[_{ap}$ famous]] as Marilyn

(96) a * John F. was $[_{degp}$ very $[_{ap}$ famous]] to have any privacy
b * John F. was $[_{degp}$ very $[_{ap}$ famous]] than Marilyn
c * $[_{degp}$ how $[_{ap}$ famous]]$_i$ John F. is t_i to have any privacy
d * $[_{degp}$ how $[_{ap}$ famous]]$_i$ John F. is t_i than Marilyn

Doetjes, Neeleman & Van der Koot (1998, p.19, exx.(48)-(49))

In sum, degree operators introduce a reference point on the scale of degrees expressed by an adjectival predicate.

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39 There is a negation in the semantics of *too*, which also allows for negative polarity items in the dependent subclause, such as *ook maar* lit. `too but' (the English NPI *even*):

(i) Hij is te beroemd om er ook nog maar één seconde van te genieten
he is too famous to there too still but one second of to enjoy
`He's too famous to enjoy even one second of it'

C The orientation

Most degree operators have an orientation. Those that have an orientation, but do not introduce a reference point, are *very* or *that*: they are used to refer to relatively high degrees.

Other degree operators, for instance *too*, introduce both a reference point and an orientation. The degree phrases projected by such operators can be modified by a phrase which indicates the distance between the reference point and the degree that is selected, in the direction indicated by their orientation.[40] Doetjes, Neeleman & Van der Koot (1998, p.20) propose that *considerably* is such a modifier. Consider the contrast in (97)-(98):

(97) a John F. was [$_{degp}$ considerably [$_{degp}$ taller]] than Marilyn
b John F. was [$_{degp}$ considerably [$_{degp}$ too famous]] to have any privacy

(98) a * John F. was [$_{degp}$ considerably [$_{degp}$ as famous]] as Marilyn
b * John F. was [$_{degp}$ [$_{degp}$ ∅ famous] [considerably enough]] to have bodyguards

Interestingly, *much* appears to be a modifier with the same function as *considerably* in (97) (cf. (99)). Recall that this was one of the arguments in section 3.7.1 against an analysis of *much* as a dummy. *Much* does contribute meaning to a phrase like *too much too tall*: it expresses information about the distance between the intended degree or being too tall and the reference point that is introduced by *too* in *too tall* (cf. (100b), in the notation used by Doetjes, Neeleman & Van der Koot, but leaving out the existential quantifier). In all examples in (99), *much* modifies a degree phrase: *more* in (99a), *less* in (99b) and *too famous* in (99c):

(99) a John F. was [$_{degp}$ [$_{degp2}$ much more] [$_{degp}$ ∅ famous]] than Marilyn
b John F. was [$_{degp}$ [$_{degp2}$ much less] [$_{degp}$ ∅ famous]] than Marilyn
c John F. was [$_{degp}$ much [$_{degp}$ too famous]] to have any privacy

[40] Since the modifier takes a reference point as one argument, the degree operator of the modified phrase has to introduce a reference point, in order to allow for this type of modification.

(100) a *considerably too tall*

$[\, p \in \mathit{UP}(p_{ref}, \text{TALL}) \wedge \text{CONSIDERABLE}(p, p_{ref})]$

b *much too tall*

$[\, p \in \mathit{UP}(p_{ref}, \text{TALL}) \wedge \text{MUCH}(p, p_{ref})\,]$

D Overview

Looking at the properties of the degree operators, we arrive at the following overview (adapted from Doetjes, Neeleman & Van der Koot (1998, p.21, ex. (52)):

(101)

	Orientation	*No orientation*
Reference point	-er too	as enough
No reference point	very how	

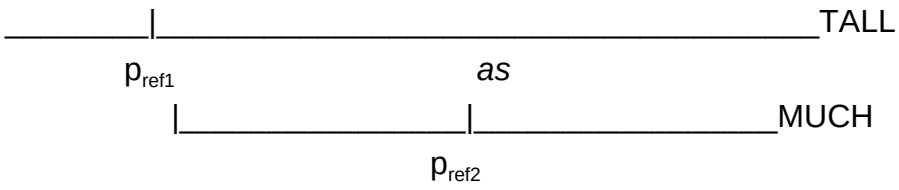
E The meaning of *much* and *more*

Since Doetjes, Neeleman & Van der Koot (1998) analyze *much* as a dummy that is just inserted to satisfy the categorial selection properties of a degree head, they dot not assign it any independent semantics. As such, they claim that *as* and *as much* share the exact same semantics, as do *too* and *too much* (ibid., p.23). Since they do not acknowledge the presence of *much* incorporated into *more* (nor the semantic contribution of *much*), they also assign the same meaning to the degree phrase *more* and the degree head *too*.[41] In section 3.7.1 I argued that the meaning of e.g. *as much too tall* builds on that of *much too tall*. In other words, the meaning

[41] The aim of Doetjes, Neeleman & Van der Koot (1998) is to prove that categorial selection is not derived from semantic selection, or, in other words, that syntax is autonomous. *More* and *too* are not identical, syntactically: the former is a full phrase, the latter a degree head. If *more* and *too* do indeed share the same semantics, this supports the authors' point that syntactic behaviour and c-selection are not reducable to semantics and to s-selection properties, since their different syntactic behaviour cannot be the result of a different meaning. In my analysis, however, *more* and *too* not only differ syntactically, but also semantically. This implies that my analysis does not serve the purpose of Doetjes, Neeleman & Van der Koot to prove that syntax is autonomous.

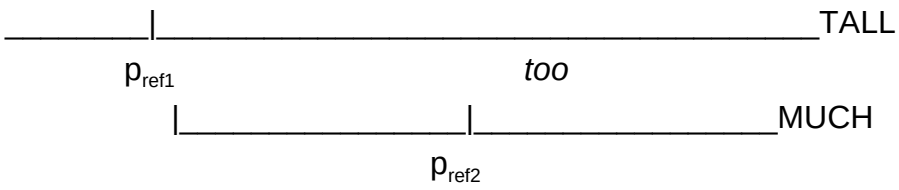
of *much* as a modifier in *much too tall* is maintained in the meaning of *as much too tall*. *Much too tall* denotes a set of degrees of tallness that are at a considerable distance from the reference point introduced by *too* in *too tall*. The zero degree of `muchness' is the reference point introduced by *too*. *As* in *as much too tall* introduces a second reference point on the scale of MUCH and maps this onto the scale of TALL:

(102) *as much too tall*



If *too much* modifies *too tall*, *too* in *too much* also introduces a second reference point on the scale of MUCH. The difference with the previous example is that in this case the function UP applies again, and the upper part of the MUCH scale is mapped onto the TALL scale:

(103) *too much too tall*



Looking at the paradigm in (101), it is possible to make a generalization as to which degree phrases may be modified by *much*: only those degree phrases of which the head Deg^0 invokes both a reference point and an orientation can be modified by it. The empty slot is intriguing. It should be filled by a degree operator which does not introduce a reference point and does not have an orientation. Recall Zwarts' (1992) assumption that every AP has a DegP on top: if there is no overt degree element, there is a covert or lexically empty one. The empty operator saturates the G argument of the adjective. Plausibly, it does not introduce a reference point, nor does it have an orientation. That is to say, the covert degree head is a natural candidate for the empty slot in Doetjes, Neeleman, & Van der Koot's table. In light

of the observation that *much* modifies those degree phrases of which the head introduces a reference point and an orientation, it follows that it cannot modify a degree phrase headed by the covert operator ∅. This is an explanation of the ungrammaticality of **much tall* in (104):[42]

(104) * $[_{degp}$ [much] $[_{degp}$ ∅ $[_{ap}$ tall]]]

Given the analogy between *too much* and *more* and given that *more* incorporates a quantifier like *much*, I propose to analyze *more* in the same vein as *too much* (cf. (85)):

(105) *much-er* = *more* [p ∈ *UP*(p_{ref}, MUCH)]

(106)

	Orientation	*No orientation*
Reference point	(much) tall-er (much) more (much) too tall	(*much) as tall (*much) tall enough
No reference point	(*much) very tall (*much) how tall	(*much) ∅ tall

[42] Another explanation is provided by Doetjes (1997). She assumes that comparison is expressed by the degree head *-er* or by modification by *more*. The most restricted form is selection by *-er*, because the degree head only selects APs (and QPs). *More* is the Elsewhere form, in the sense that it occurs wherever the bound morpheme cannot: the Elsewhere form can be blocked by the possibility of the more restricted form. As such, **more tall* is ungrammatical because selection by *-er* as in *taller* is possible.

This account of the ungrammaticality extends to phrases of other syntactic categories. Since a degree head does not select a prepositional phrase, for instance, the Elsewhere form occurs:

(i) a * -er on drugs
b more on drugs

Similarly, *very* and *much* seem to share the same meaning. Doetjes analyses *very* as a Deg^0, that only selects APs (and QPs). *Much*, however, can adjoin to numerous categories and is the Elsewhere form. Since *very tall* is grammatical, **much tall* is blocked.

Note however, that a restricted form need not always absolutely block the Elsewhere form. That is, for some (derived) adjectival predicates the synthetic comparative is not exclusive. For instance, I would accept both forms in (ii):

(ii) ingetogen-er / meer ingetogen
modest-er *more modest*

In sum, *much* does contribute meaning to the interpretation of degree phrases it occurs in. This implies that the meaning of *too much* is not exactly identical to that of *too* as a degree head. It also implies that the meaning of *more* is not exactly identical to that of the comparative degree morpheme *-er*, nor to that of *too*, contrary to the claims in Doetjes, Neeleman & Van der Koot (1998).

Chapter 4

Result Clauses

part I

Previous Analyses

4.1 Introduction

Degree heads are often accompanied by subclauses that cannot occur without the degree heads being present. Examples are given in (1):

(1) a Er zijn **zo**veel mensen gekomen **dat** de kamer te klein is
there are so-many people come that the room too small is
`So many people came that the room is too small'
b De bank is **te** klein **om** met drie mensen op te zitten
the couch is too small to with three people on to sit
`The couch is too small to sit on it with three people'
c Deze stoel is nog grot**er** uitgevallen **dan** die tafel !
this chair is still larger out-fallen than that table
`This chair turned out even larger than that table'

Several analyses treat the dependency of result and comparative clauses on degree elements as an instance of selection. They assume that the degree element selects a specific type of dependent clause and that this clause is generated within the same projection as the degree element itself. Since the dependent clauses almost always appear sentence finally, it is generally assumed that they are extraposed. The first subsections of 4.3 gives an overview of these analyses and discusses what degree-phrase-internal generation would look like within the constraints on structures posed by the antisymmetric framework adopted here.

Given the theoretical framework set out for this thesis in the introductory chapter, an analysis that involves rightward movement is not acceptable. This implies that the extraposition analyses are not compatible with the ideas of Kayne (1994). In the last part of section 4.3 some analyses will be discussed (including

Kayne's 1994 analysis) in which the dependent clauses are argued to be base-generated in their surface position.

The overall conclusion of this chapter will be that clauses dependent on degree heads are not generated within the degree phrases themselves.

I will start off with a brief presentation of properties of result clauses that bear on the analyses to be discussed in this chapter. These properties will be discussed in detail in the next chapter.

4.2 Phenomena to be accounted for

Result clauses not only cooccur with *zo* `so', but also with *zodanig* `such (that)' or *dusdanig* `such'. In English, they cooccur with *so* or *such*:

(2) a Hij is **zo** moe **dat** ie niet meer kan lopen
he is so tired that he not more can walk
`He is so tired that he can't walk anymore'

b Hij is **zodanig/ dusdanig** in de war **dat** ie z'n naam niet meer weet
he is so/ thus in the knot that he his name not more knows
`He is confused to such an extent that he cannot remember his name'

c Hij is **zo**'n bullebak **dat** iedereen bang voor 'm is
he is so-a bully that everyone afraid for him is
`He is such a bully that everyone is afraid of him'

The examples to come will mainly use *zo* `so'. In this section I present some characteristics of the combination of the degree head *zo* `so' and its associated result clause.

4.2.1 Clause-final occurrence of result clauses

Result clauses usually occur at the end of the (smallest) clause containing their antecedent *zo* `so'.

(3) a*? Ik heb [**zo**veel boeken **dat** ze niet op één plank zouden kunnen staan] gelezen
I have so-many books that they not on one shelf would can stand read

b Ik heb [**zo**veel boeken] gelezen [**dat** ze niet op één plank zouden kunnen staan]
I have so-many books read that they not on one shelf would can stand
`I read so many books that they would not fit on one shelf'

In their sentence-final position, result clauses follow postverbal adverbs. They also follow complement clauses:

(4) a Ik heb **zo** hard gerend gisteren **dat** ik een uur buiten adem was
I have so fast run yesterday that I an hour out-of breath was
`I ran so hard yesterday that I was out of breath for an hour'

b Hij zei **zo** zacht dat ze ziek was **dat** niemand hem hoorde
he said so softly that she ill was that nobody him heard
`He said so softly that she was ill that nobody heard him'

Guéron & May (1984) provide an example of a result clause following a relative clause associated with the sentence subject. The Dutch translation of such an example is a little weird, but there is a clear contrast between (6a) and (6b):

(5) a Everybody is **so** strange [whom I like] [**that** I can't go out in public with them]
b * Everbody is **so** strange [**that** I can't go out in public with them] [whom I like]

(6) a ? Iedereen is **zo** vreemd [die ik ken] [**dat** ik niet met ze in het openbaar wil verschijnen]
everyone is so strange that I know that I not with them in the public want appear
`Everyone is so strange [whom I know] [that I do not want to appear in public with them]'

b * Iedereen is **zo** vreemd [**dat** ik niet met ze in het openbaar wil verschijnen] [die ik ken]

So far, we saw that result clauses usually appear clause-finally. With respect to the distribution of the antecedent *zo* `so', the above examples show that it can occur in noun phrases, in degree phrase adverbials and in degree phrases that are used predicatively. The next section provides some more environments for *zo* `so'.

4.2.2 Distribution of the antecedent *zo* `so'

The antecedent of a result clause can occur in about any constituent in a clause: subject noun phrases, (in)direct object noun phrases, predicative degree phrases, adverbial degree phrases, noun phrase complements in adverbial PPs etc.:

(7) a **Zo**veel mensen waren gekomen **dat** de kamer te klein was
so-many people were come that the room too small was
`So many people came that the room was too small'
(subject)

b Ze aten **zo**veel kaas **dat** ze er misselijk van werden
they ate so-much cheese that they there sick of got
`They ate so much cheese that they got sick'
(direct object)

c Hij heeft **zo**veel mensen een boek gegeven **dat** hij blut is
he has so-many people a book given that he broke is
`He gave a book to so many people that he's broke'
(indirect object)

d Hij is **zo** lang **dat** hij over iedereen heen kijkt
he is so tall that he over everybody PRT looks
`He is so tall he can look over everybody'
(predicative degree phrase)

e Hij is **zo**'n bullebak **dat** iedereen hem uit de weg gaat
he is so-a bully that everyone him out the way goes
`He is such a bully that everyone stays out of his way'
(predicative noun phrase)

f De deur is **zo** fel rood **dat** 't m'n ogen zeer doet
the door is so bright red that it my eyes hurt does
`The door is so brightly red that it makes my eyes hurt'
(adverbial modifying predicative degree phrase)

g Janna loopt **zo** snel **dat** niemand haar kan bijhouden
Janna walks so fast that noone her can up-keep
`Janna walks so fast that noone can keep up with her'
(adverbial degree phrase)

h Oude port wordt in **zo**veel huizen gedronken **dat** het niet meer exclusief te noemen is
old port is in so-many houses drunk that it not more exclusive to call is
`Old port is drunk in so many households that you can't call it exclusive anymore' *(in adverbial PP)*

Zo `so' can also occur as an adverbial in itself with a meaning like `in such a way', as in (8) below:

(8) Je moet medicijnen **zo** opbergen **dat** peuters er niet bij kunnen
you must medicine so put-away that toddlers there not at kunnen
`Medication must be put away such that toddlers can't reach it'
(as adverbial)

4.2.3 Deep embedding of *zo* `so'

Apart from its distribution across almost all constituents of a clause, the antecedent degree phrase of a result clause can be deeply embedded into the constituent it occurs in:

(9) a [Plannen [van [**zo**veel samenzweerders]]] zijn ontdekt **dat** de regering hulpeloos lijkt
plans of so-many conspirators are discovered that the government helpless seems
`Plans of so many conspirators have been discovered that the government seems to be helpless'

b [De notulen [van [vergaderingen [van [**zo**veel samenzweerders]]]]] zijn ontdekt **dat** men eindelijk kan reconstrueren wie de leider is
the notes of meetings of so-many conspirators are discovered that they finally can reconstruct who the leader is
`Notes of meetings of so many conspirators have been discovered that they can finally reconstruct who the leader is'

In the next subsection, we will see that if the result clause occurs at the end of the matrix clause, it is ungrammatical to have *zo* `so' in a (sentence-internal) relative clause associated with the subject. The next section discusses the contexts in which subclause-internal occurrences of *zo* `so' are possible and where they are not.

4.2.4 No linking across (non-complement) CPs

In 4.2.1 above it was observed that result clauses usually occur sentence-finally. In this subsection we will see that its position is clause bound in the following sense: when a result clause is associated with a degree head in a relative clause or subject clause, it occurs right after (or at the end of) that subclause. Examples (10-11) exemplifies this in the case of a relative clause:

(10) a The secret plans, that **so** many people know about [**that** the police has lost all credibility], have finally been hatched
b * The secret plans, that **so** many people know about, have finally been hatched [**that** the police has lost all credibility]

(11) De criminelen, die bij **zo**veel mensen bekend waren **dat** de politie gezichtsverlies leed, zijn eindelijk gearresteerd
the criminals that with so-many people known were that the police face-loss suffered are finally arrested
`The criminals, who were known to so many people that the police lost face, have finally been arrested'

With subject clauses as well, the result clause has to be adjacent to the subclause containing *zo* `so':

(12) a Het is duidelijk dat de haven **zo** mooi is **dat** Janna 'm wil fotograferen
it is clear that the harbour so beautiful is that J him wants photograph
`It is clear that the harbour is so beautiful that Janna would like to take a picture of it'
b [Dat de haven **zo** mooi is **dat** Janna 'm wil fotograferen] is duidelijk
`That the harbour is so beautiful that Janna would like to take a picture of it is clear'
c * [Dat de haven **zo** mooi is] is duidelijk [**dat** Janna 'm wil fotograferen]
* `That the harbour is so beautiful is clear that Janna would like to take a picture of it'

However, if the antecedent occurs in a subclause that is the complement of a verb, this restriction does not hold. In (13), the result clause is construed with two coordinated complement clauses, witness the fact that the three of them can be topicalized together:

(13) [[Dat zij **zo** klein is] en [dat hij **zo** groot is] **dat** ze samen op Mini en Maxi lijken] zei Jan
that she so small is and that he so big is that they together on Mini and Maxi resemble said Jan

Interestingly, a version of a similar example in which no topicalization takes place is ambiguous between two readings. Consider (14) (after Rouveret 1978):

(14) Janna gelooft dat haar vrienden **zo** invloedrijk zijn **dat** ze de baan krijgt
Janna believes that her friends so influential are that she the job gets

This example can mean that Janna believes her friends to be influential to such an extend that their influence will get her the job. It also has an interpretation in which it is Janna's belief (that her friends' influence will get her the job) that is so strong, that this will actually get her the job. A conceivable context would be that the strength of her belief provides her with enough self-confidence to make her presentation or interview successful. In the first interpretation, the result clause is construed with the complement clause, which can be illustrated by topicalizing them together:

(15) [Dat haar vrienden zo invloedrijk zijn dat ze de baan krijgt] gelooft Janna
that her friends zo influential are that she the job gets believes Janna

In the second interpretation, the result clause is construed with the matrix clause.

4.2.5 Split antecedents

A result clause can be associated with more than one antecedent.[1] Liberman (1974) provides the following example:

---

[1] In Andrews (1975), split antecedent constructions are called `multiple headed' result clauses (or comparatives, relative clauses etc.).

(16) John hit his car **so** hard **so** many times with **such** a big hammer **that** it finally started

Moreover, the antecedents of the result clause need not occur in one clause:

(17) De concurrentie is **zo** groot en de kwaliteitsverschillen zijn **zo** klein, **dat** uiterlijk en image [van producten] in toenemende mate de doorslag geven (Leeuwarder Courant, 14-2-98)
the competition is so big and the quality-differences are so small that appearance and image [of products] in increasing degree the decision give
`The competition is so heavy and the differences in quality are so small that the appearance and the image of products play an increasing part in making a choice between them'

(18) Hij is **zo** klein en zij is **zo** groot **dat** ze samen op Mini en Maxi lijken
he is so small and she is so large that they together on Mini and Maxi seem
`He is so small and she is so large that they look like Mini and Maxi together'

In section 4.3.5 below, the significance of examples like this in accounting for result clause constructions will be discussed.

4.2.6 Nested relations

It is possible to have two result clause constructions in one sentence. The following example shows that the dependencies between the two degree heads and the two result clauses must be nested:

(19) a **Zo$_1$**veel mensen hebben **zo$_2$**veel geld [**dat$_2$** ze niet weten
so-many people have so-much money that they not know
wat ze ermee moeten doen] [**dat$_1$** liefdadigheidsinstellingen
what they there-with should do that charity-institutions
failliet zouden gaan aan de postzegels die nodig zijn om
bankrupt would go on the stamps that needed are to
hen allemaal te bereiken]
them all to reach
`So many people have so much money that they do not know what to do with it, that charity institutions would go bankrupt on the stamps needed to reach them all'

b * **Zo$_1$**veel mensen hebben **zo$_2$**veel geld [**dat$_1$** liefdadigheids-instellingen failliet zouden gaan aan de postzegels die nodig zijn om hen allemaal te bereiken] [**dat$_2$** ze niet weten wat ze ermee moeten doen]

When two degree phrase of different nature cooccur in one sentence, the dependencies must be nested as well:

(20) a Janna is in haar jeugd **zo**veel lang*er* geweest *dan* Marie **dat** ik niet kan geloven dat Marie nu de langste is
Janna is in her youth so-much taller been than Marie that I not can believe that Marie now the tallest is
`Janna was so much taller than Marie in her youth that I cannot believe that now Marie is tallest'

b * Janna is in haar jeugd **zo**veel lang*er* geweest [**dat** ik niet kan geloven dat Marie nu de langste is] [*dan* Marie]

As we will see in chapter 5, the nesting requirement also holds for other constructions.

4.2.7 Summary

In this section we saw that although a result clause usually occurs sentence-finally, the associated degree head can appear in almost any constituent of that sentence. In addition, the degree head can be deeply embedded in the constituent it occurs in (e.g. within an NP in a PP that is part of an NP in another PP etc.).

When the result clause is separated from the antecedent degree head by a CP boundary, the sentence is usually ungrammatical. That is, a result clause that is linked to a degree head in a relative clause will appear in a position at the end of that relative clause, and cannot be separated from the subclause by matrix clause material. However, in case the CP is a complement clause, this restriction does not hold and the result clause and its antecedent can be separated by a CP node.

Another interesting aspect of result clause constructions is that they allow multiple antecedents. That is to say, one result clause can be associated with more than one degree head. These antecedents need not be part of a single clause.

The rest of this chapter briefly discusses a number of analyses of the degree head/ result clause combination.

In the next chapter the phenomena discussed just now will be taken up again in more detail, and the result clause construction will be compared to three other constructions. In the course of the presentation of my analysis of result clauses in terms of conjunction, I will indicate how the data can be accounted for.

4.3 Analyses

In Bresnan (1973), Abney (1987) and Corver (1990) it is assumed that the subclauses that often cooccur with degree elements are selected by the degree element, and hence, that they are generated within the projection that hosts the degree element. Since result clauses generally appear in sentence-final position, they are assumed to have moved and right-adjoined to a (usually high) projection. Bresnan (1973) and Corver (1990) are discussed in sections 4.3.1 and 4.3.2, respectively.

In contrast to the above analyses, movement to the right and right-adjunction are not allowed in an antisymmetric framework. It is interesting to see what an analysis looks like that is compatible with the antisymmetric demands, yet maintains the assumption that result clauses are generated internal to the degree phrase. Such an analysis will be discussed in section 4.3.3.

Guéron & May (1984) leave open whether result clauses are base-generated in sentence-final position or moved there. Their analysis is discussed in section 4.3.4.

Apart from the objection that an extraposition analysis does not obey the restrictions set by Kayne's (1994) antisymmetry framework, other problems for degree phrase-internal generation of subclauses were noted by authors in the 1970s. Sections 4.3.5 and 4.3.6 present an overview of Andrews (1975) and Rouveret (1978). Kayne's (1994) proposal is presented in section 4.3.7, after which a summary follows.

4.3.1 Bresnan 1973

Although Bresnan (1973) is primarily concerned with comparatives, she also provides a number of result clause examples. She considers both the *-er* morpheme and words like *so* and *such* as Determiners within a QP headed by

much.[2] The *than*-phrase or -clause in comparatives is generated as a sister to the *-er* morpheme, and then extraposed.

(21) a John is taller than Bill
b John is [$_{ap}$ [$_{qp}$ -er [$_{s'}$ than Bill is [$_{ap}$ [$_{qp}$ x much] tall]] much] tall]
c John is [$_{ap}$ [$_{qp}$ -er t_i much] tall [$_{s'}$ than Bill is [$_{ap}$ [$_{qp}$ x much] tall]]$_i$]
d John is [$_{ap}$ [$_{qp}$ t_i tall-er] [$_{s'}$ than Bill is]$_i$]

Given that Bresnan assigns the same status to the various degree elements, I will assume that her proposal for comparative extraposition extends to result clause constructions as well. That is, Bresnan (1973) represents the type of analysis in which result clauses are generated degree phrase-internally.

4.3.2 Corver 1990

Corver (1990, p.49) argues against the idea that a subclause that is dependent on a degree head is generated as its sister and then extraposed. He argues that a *than*-phrase in English is not opaque for extraction, whereas moved constituents generally are (his example (44), p.49):

(22) a Who$_i$ is John [tall**er** [**than** t_i]] ?
b Which man$_i$ do you consider Bill [strong**er** [**than** t_i]]?

To explain why a WH-phrase can be extracted out of [*than* +WH] in comparatives, Corver (1990) suggests that the *than*-phrase is generated as a right branch constituent (a specifier) within the DegP. That is to say, the order generated is Deg- A- [*than*-XP], and no extraposition is needed. The structure Corver (1990) proposes is given below (the adjective moves to the degree head to pick up the comparative morpheme):

(23) a [$_{degp}$ [$_{deg'}$ -er [$_{ap}$ tall]] [than who]]

---

[2] Bresnan (1973) assumes that *much* and *many* combine with *-er* to form *more* (cf. chapter 3, section 3.5 for discussion).

b DegP

Deg' *[than who]*

Deg AP

Whenever the *than*-phrase is moved out of the degree phrase, extraction yields ungrammaticality, which can now be explained as a freezing effect caused by movement (Corver 1990, ex.(46)):

(24) a * Who$_i$ was John [taller t_k] at the time [than t_i]$_k$?
b * Which man$_i$ do you consider Bill [stronger t_k] at the time [than t_i]$_k$?

With respect to result clauses selected by the English degree head *so*, Corver (1990, pp.48-49) claims that they are generated internally to the degree phrase as well. As such, the clause is governed by the degree head.

Tying in with Stowell's (1981) suggestion that complementizers of declarative clauses can be empty when they are governed by a relevant head, government of the result clause by the degree head explains why the result clause can sometimes have an empty complementizer. That is to say, as long as a result clause is not moved out of the degree phrase, it will be governed by the degree head and the complementizer can be left out (examples: Corver 1990, p.48).

(25) a John is [so tall *that* he can look over everyone]
b John is [so tall _ he can look over everyone]

(26) a?* John was [so tired t_i] [after the game] [_ he fell asleep]$_i$
b?* John was [so tall t_i] [during his youth] [_ he could look over everyone]$_i$

Although Corver does not give an explicit structure for a degree phrase with a result clause, I assume that it will be the same structure as in (x) above, since in Corver (1990) the comparative morpheme and *so* are still considered to have the same status, viz. that of being degree heads.[3]

Corver (1990) does not discuss the result clause construction any further.

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[3] See the previous chapter for why Corver (1994, 1997) considers *-er* and *so* as representing separate heads (viz. Q and Deg, respectively) and for arguments that they do not have a different status after all.

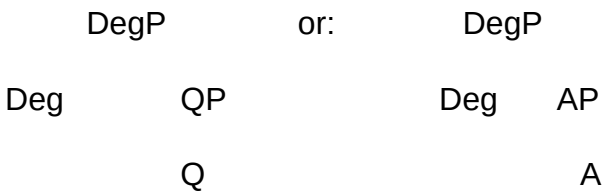
4.3.3 Degree Phrase-internal generation in an antisymmetric framework

In the introductory chapter we proposed to leave rightward movement and right-adjunction out of the theory of syntax. Both analyses of result clauses that have just been discussed involve extraposition and, hence, are not compatible with Kayne's (1994) ideas.

This section will try to develop an analysis that allows for degree phrase-internal generation of result clauses, while still maintaining the ban on rightward movement and right adjunction.

First we have to decide on what structure to start from. Consider the internal structure of a degree phrase that we decided on in the previous chapter:

(27)

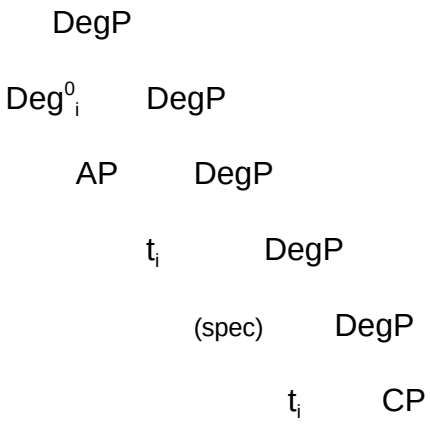


There is no place in this constituent for subclauses associated with the degree head.[4] Rather, about the only structure capable of hosting the QP and AP complement of the degree head and the result clause as well is a structure in the style of Larson's VP-shell:[5]

[4] Unless one assumes they are adjoined to the degree phrase projection, in which case the derivation leads to the same problems as discussed in the rest of this section.

[5] In chapter 2 (section 2.2.2.4) the question was asked what structure we would have to assign to an AP projected by an adjective that has a PP complement and also selects the phrase it modifies. Here too, the Kaynean restrictions on syntactic structure lead to a Larson-style structure.

(28)



Suppose the uppermost DegP above is adjoined to a constituent XP in the main clause:

(29) a * Janna heeft [$_{xp}$ [$_{degp}$ zo snel [$_{cp}$ dat ze vroeg naar huis kon]] [$_{xp}$ haar werk afgemaakt]]
Janna has so quickly [that she early to house could] her work finished
b Janna heeft [zo snel] haar werk afgemaakt [dat ze vroeg naar huis kon]
Janna has so quickly her work finished that she early to house could
`Janna finished her work so quickly that she could go home early'

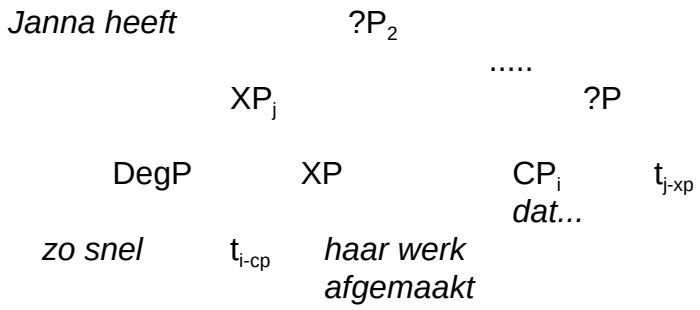
The correct word order in (29b) above cannot (by assumption) be reached by moving the subclause to the right and adjoining it somewhere to the right of the clausal structure.

Instead, we would have to disengage the subclause from the rest of the degree phrase (cf. (31a) below) by moving it to the left, in order to be able to move the rest of the degree phrase:

(30) Janna heeft [$_{?p}$ [$_{cp}$ dat...]$_i$ [$_{xp}$ [$_{degp}$ zo snel t_i] [$_{xp}$ haar werk afgemaakt]]]

In fact, we will be forced to move the rest of the degree phrase together with the bottom part of the clausal structure to the left over the subclause to get the correct word order:

(31) Janna heeft [$_{?p2}$ [$_{xp}$ [$_{degp}$ zo snel t_i] [$_{xp}$ haar werk afgemaakt]]$_{xp}$ [$_{?p}$ [$_{cp}$ dat ze vroeg naar huis kon]$_i$ t_{xp}]]



Although it is thus possible to arrive at a sentence-final position for the subclause, the movements and extra projections needed render this type of analysis rather unelegant for Dutch.[6]

In addition, we will see in sections 4.3.4 and 4.3.5 that degree phrase-internal generation of subclauses runs into a number of other problems as well. To conclude this section, then, generating the subclauses internal to the degree phrase they are associated with is not a plausible solution within an antisymmetric framework.

4.3.4 Guéron & May 1984

Guéron & May (1984) assume that sentence-final result clauses are adjoined to S' (= CP). Although they provide examples in which result clauses are generated as (e.g.) noun phrase adjuncts (when they are related to an instance of *so* within that noun phrase, cf. (32)), Guéron & May leave open whether result clauses are actually moved to the end of the sentence or base-generated as CP adjuncts.

(32) $[_{np}\ [_{np}$ so many books] that...]

The reason they can leave the question of movement open is that they assume that the head-complement relation between the degree element and the result clause is licensed at LF, not at D-structure. At LF, *so*, which they consider to be a QP, undergoes Quantifier-Raising (QR) and adjoins to S' (= CP). The sentence-final result clause was already right-adjoined to S' at S-structure, and hence is governed by the QP. Guéron & May provide an LF-condition in which heads must govern their complements. Since *so* governs the result clause when they are both adjoined

6 White (1997) proposes a Larson-style degree phrase to account for result clauses in English.

to CP, the latter can be interpreted as a complement of the former, thus expressing the dependency relation between the two.

Guéron & May (1984) are concerned with differences between result clause constructions and relative clauses that are associated with quantified noun phrases. They observe that result clauses do, but relative clauses do not allow multiple antecedents within a single clause (their ex.(7a,b)):

(33) a So many people liked so many pictures at the gallery that the exhibition was held over for two weeks
b * Every man saw some woman last year who is similar

They account for this contrast as follows. In the LF representations, both instances of *so* (i.e. both QPs) have raised: the first adjoins to CP and the second adjoins to the first QP. Crucially, both QPs can be assigned the same index, which will also be the index of the result clause. The result clause, then, is governed by (and hence a complement of) both of the QPs. Hence, split antecedents are possible with result clauses.

In relative clause cases, the extraposed clauses are adjoined to S (= IP/AgrSP).[7] Guéron & May claim that a noun phrase like *every man* undergoes

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[7] Guéron & May (1984) assume that result clauses are S'-adjuncts and relative clauses are S-adjuncts on the basis of the following contrast:

(i) a Everybody is so strange whom I like that I can't go out in public with them
b * Everybody is so strange that I can't go out in public with them whom I like

They follow Williams (1974) in assuming that the strict order is an effect of the fixed position of result clauses and relative clauses as S'- and S-adjuncts, respectively.

Guéron & May also provide an account for this structural difference. They provide a definition of variables in which they are required to be contained in an A-position and to be A'-bound within S' (ibid., p.8), and assume that such variables are subject to the Theta-criterion. Now if relative clauses are S-adjuncts and the associated noun phrases move up at LF to adjoin to S as well, the NP trace will be A'-bound within S' and hence be a variable that is subject to the Theta-criterion.

Suppose a relative clause were attached to S': then the associated noun phrase must QR to S' as well in order to license the subclause as its complement. In that case, the NP trace will not be A'-bound within S' in that case, which implies that it is not a variable. It should be a variable, however, since the trace does occur in a thematic position. Thus, the Theta-criterion is violated and the sentence would be ungrammatical.

Result clauses, however, are S'-adjuncts, and the degree elements (QPs) raise at LF to adjoin to S' as well. This implies that the traces in result clause constructions will not be variables and are not subject to the Theta-criterion.

Suppose a QP *so* would raise to S at LF to license a result clause that is adjoined to S as well. The QP would have a trace within an NP in a thematic position. According to the definition of variable, this trace will be a variable that is subject to the Theta-criterion. However, since there is no Theta-role to be assigned to the position of the trace, this option also yields a violation of the Theta-criterion.

Unfortunately, Guéron & May can only exclude QR of *so* to S (instead of S'). Their definition of government, upon which the head-complement relation is based, does not prevent a result clause from being adjoined to S and licensed by an S'-adjoined QP. As such, they cannot fully exclude the

QR as a whole, in contrast to movement of *so* out of *so many people*. The moved noun phrase adjoins to S, from where it governs the relative clause and identifies it as its complement.

Now consider (b) above. If a noun phrase associated with a relative clause moves as a whole, both subject and object noun phrase in (b) will have to move. However, the subject trace will c-command the object trace in a split antecedent like the one in (b). As a consequence of one trace c-commanding the other, the moved noun phrases and their respective traces are not allowed to bear the same index (cf. May 1981 and Chomsky 1981). In that case, then, the noun phrase moved last cannot govern the relative clause, because the other noun phrase (which was moved first and to which the second one is adjoined) intervenes. That is, the relative clause can only be interpreted as the complement of the noun phrase that was moved first and is able to govern it at LF. Split antecedents within one clause, then, are out for relative clauses.

As we will see in chapter 5, relative clauses do allow split antecedents across clauses:

(34) **A man** entered the room and **a woman** went out **who were quite similar**

(Perlmutter & Ross 1970, Kaan 1992)

Guéron & May (1984) do not discuss examples like this, and their analysis cannot straightforwardly account for them either.[8]

4.3.5 Andrews 1975

In section 4.3.1 we saw that Bresnan (1973) assumes that comparative clauses are generated as a sister of the comparative morpheme, and that they are extraposed to sentence-final position. Andrews (1975) notes several problems with Bresnan's (1973) assumptions.

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ungrammatical result clause > relative clause order.

[8] Interestingly, the account of why relative clauses do not allow split antecedents gives rise to the following situation: a relative clause can be associated with a (quantified) noun phrase only if that noun phrase is the first to undergo QR at LF. Now if the relative clause were associated with an object NP, and the subject were a quantified noun phrase as well, the object should cross the quantified subject in the course of QR.

The first is that in Bresnan's structures the comparative clause is adjoined to e.g. a noun phrase after movement:

(35) $[_{np}\ [_{np}$ more soybeans] than Jane has (x many) soybeans]

Since this is the same noun phrase the comparative clause originates in, its movement and subsequent adjunction violate the A-over-A-principle (Ross 1967).

A second problem for an extraposition analysis of comparative clauses is the following. The examples in (37) are derived from the original order in (36), by formation of *more* (out of *much* and *-er*) and extraposition of the subclause. The problem is that, since extraposition is not obligatory, there is nothing that prevents the ungrammatical examples in (38). In (38), *more* is formed, but subsequent extraposition of the clause introduced by *than* does not take place (adapted from Andrews 1975, pp.159-160, exx.(82)-(84)):

(36) a Bill sliced [-er [than Harry sliced x much bologna] much salami]
b The table is [-er [than the door is x much wide] much long]
c [-er [than x many men made reservations] many women made reservations
d He gave [-er [than he gave x much attention to his mistress] much cash] to his mistress

(37) a Bill sliced more salami than Harry did bologna
b The table is longer than the door is wide
c More women than men (did) made reservations
d He gave more cash than he did attention to his mistress

(38) a * Bill sliced more [than Harry sliced bologna] salami
b * The table is more [than the door is wide] long
c * More [than many men made reservations] women made reservations
d * He gave more [than he did attention to his mistress] cash to his mistress

The third (and, I agree, fatal) problem for an extraposition analysis consists of `multiple-headed comparatives' or comparatives with split antecedents (Andrews 1975, p.160 ff.). Consider the following examples:

(39) a **As** fair a woman and **as** foul a man **as** I have ever seen together are coming toward us
b Marcill gave a **longer** talk at a **better** attended session **than** did her husband

c Alfred bestowed a **heartier** kiss on a **prettier** girl **than** Maxwell did

Liberman (1974) also gives a result clause with three antecedents:

(40) John hit his car **so** hard **so** many times with **such** a big hammer **that** it finally started

At first sight, these examples could be analysed as instances of Right Node Raising, in which case a copy of the clause in extraposition is generated in each degree phrase. However, the presence of *together* in (39a) indicates that this cannot be the case, since **[as fair a woman as I have ever seen together]* is ungrammatical. A similar observation has been made with respect to relative clauses, in the classic example of Perlmutter & Ross (1970, ex.(3), cf. also Kaan 1992):

(41) **A man** entered the room and **a woman** went out **who** were quite similar

The plural verb and the predicate *similar* in the relative clause require a plural antecedent (viz. *a man* plus *a woman*), which implies that the clause cannot be generated in either noun phrase (nor in both):

(42) a * [A man [who were quite similar]] entered the room and a woman went out
b * A man entered the room and [a woman [who were quite similar]] went out
c * [A man [who were quite similar]] entered the room and [a woman [who were quite similar]] went out

Therefore, a Right Node Raising analysis is out of the question for comparatives, result clauses and relative clauses with split antecedents.

All of these problems suggest to Andrews that the subclauses at issue are base-generated in sentence-final position instead. He assumes they are base-generated as sisters to the clause that is in their scope (Andrews 1975, p.167).

In short, there are arguments against degree phrase-internal generation of dependent clauses that are independent of the antisymmetric framework adopted in this thesis.

4.3.6 Rouveret 1978

Rouveret (1978) also rejects an extraposition analysis of a type of subclause that is dependent on a degree element, in this case result clauses. He argues that if result clauses are indeed extraposed from within the projection of the (French) degree element *si* `so' (which he considers to be a quantifier), then the distribution of the result clause relative to *si* must be subject to Subjacency. That is to say, if a result clause is moved from the position it originates in and into its extraposed surface position, it should not be able to cross more than one cyclic node at a time without creating an ungrammatical sentence.

The standard assumptions at the time were that result clauses are generated together with *si* `so' in the specifier position of AP or NP and that the cyclic nodes in French are NP, AP and S' (= CP).

Consider the pair in (43) and the structure assumed (cf. Rouveret 1978, p.170, exx. (38a,b), (40)):

(43) a Un homme **si** furieux **qu**'il pouvait à peine parler, est entré dans la pièce
`A man so angry that he could hardly speak came into the room'
b * Un homme **si** furieux est entré dans la pièce, **qu**'il pouvait à peine parler

(44) $[_{np}$ un homme $[_{ap}$ $[_{qp}$ si que S] furieux]] est entré la pièce

The (43b) example could be ungrammatical because the extraposed result clause crossed both an AP and an NP boundary, thereby violating Subjacency. If this is indeed the deciding factor, we would expect (45) to be ungrammatical as well (Rouveret, p.170, ex. (39)):

(45) Un homme **si** furieux est entré dans la pièce, **que** toutes les conversations se sont tues
`So angry a man came into the room, that everyone [fell] silent'

Since (45) is not ungrammatical, Rouveret argues that Subjacency cannot be the cause of the ungrammaticality of (43b).

Complex nominal structures provide additional examples in which a result clause would be moved across too many cyclic nodes if it were extraposed (Rouveret 1978, p.170). The following are grammatical, which is unexpected under an extraposition analysis:

(46) a [$_{np}$ L'exécution de [$_{np}$ **tant** de Chouans]] a été décidée par la Convention, **que** la Vendée est restée dépeuplée pendant plusieurs décennies
`The execution of so many Chouans was ordered by the Convention that Vendée remained unpeopled for many years'

b [$_{np}$ La création de [$_{np}$ **tant** de tableaux]] a été confiée à Picasso, **qu**'il a du travail pour une année
[*the creation of so many pictures has been commissioned to Picasso that he has of-the work for one year*
`Picasso was commissioned to do so many pictures that he had enough work for a year']

c [$_{np}$ Le mérite de [$_{np}$ la découverte de [$_{np}$ **tant** de complots politiques]]] a été attribué à Fouché, **que** Talleyrand ne peut rester inactif plus longtemps
`Credit for the discovery of so many political plots has been attributed to Fouché, that Talleyrand cannot stay apart any [longer]'

Result clauses can also be extracted from APs embedded in complex nominals:

(47) [$_{np}$ La découverte d' [$_{np}$ un complot [$_{ap}$ **si** diabolique]]] a été attribuée à Fouché par l'empereur, **que** Talleyrand ne peut rester inactif plus longtemps
[*the discovery of a plot so diabolic has been attributed to Fouché by the-emperor that Talleyrand not can stay inactive more long*
`The discovery of such a diabolic plot is attributed by the emperor to Fouché that Talleyrand cannot remain inactive any longer']

Rouveret (1978) concludes that extraposition of result clauses is not subject to Subjacency, and suggests that the clauses do not move at all, but are base-generated in sentence-final position.

Rouveret (1978, p.159 ff.) considers the following type of example as well (my glosses, PR):

(48) a Marie dit qu'elle a des amis **si** influents **qu**'elle va obtenir le poste
Marie says that-she has of-the friends so influential that-she will get the job
`Marie says that she has such influential friends that she is going to get the job'

b = Marie says that her having friends influential to a degree x will result in her getting the job

c or: Marie's saying that she has friends influential to a degree x will result in her getting the job

The second reading corresponds to a structure in which the result clause is not construed with the clause that contains the QP *so*, but in which it is construed with the matrix clause (recall that in section 4.2.4 we also saw that a result clause can be associated with a degree phrase within a complement clause).

To express the link between *si* `so' and the result clause Rouveret (1978) proposes an interpretative mechanism. He considers *si* `so' and *trop* `too' to "involve some sort of quantification over degrees and extents" (ibid., p.175), and hence treats them as operators binding a variable in the logical representation of sentences.[9] The general format of the representation is taken from Liberman (1974). It is given in (49), with an example of its application in (50).

(49) (SI *x*) (...*x*...) (que S)

(50) a Jean est **si** grand **qu**'il peut toucher le toit
`Jean is so big that-he can touch the roof'
b (SI *x*) (Jean is *x* grand) (que Jean peut toucher le toit)

There are two additional issues:

(51) The scope of a quantifying expression is generally bound to the clause that contains it in surface structure

(52) A logical representation of the type of [(49)] is well formed if and only if the "interpreted positions" of *si* and the *que*-clause are immediately to the left and immediately to the right of the same sentential node

To condition (51) it should be added that some verbs allow *si* `so' to move up to the matrix clause and take scope there (Rouveret 1978, p.181-2), as in the matrix clause interpretation in (48c) above.

4.3.7 Kayne 1994

Having set out his antisymmetry framework, in which rightward movement and right adjunction are excluded, Kayne (1994) proceeds to present alternative analyses for problems that were traditionally analyzed as involving precisely those two

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[9] See Zwarts (1992) and the discussion in chapter 3 of degree heads as operators that saturate a Grade argument position in the Theta-grid of gradable adjectives.

operations. Among these problems are coordination, relative clauses and extraposition phenomena, all of which will be addressed in the course of this thesis.

Since Kayne derives his analysis of result clauses and comparatives from the properties they do not share with relative clauses, I will briefly discuss his analysis of relative clauses as well.

The contrastive pair that is crucial to Kayne's analysis of result clauses in relation to that of relative clauses is given in (53) (both examples are from Guéron & May 1984):[10]

(53) a * Plots by **many conspirators** have been hatched **who** work for the government
b Plots by **so** many conspirators have been hatched **that** the government is helpless

In (53a) the relative clause introduced by *who* cannot refer back into the complex noun phrase *plots by many conspirators*, whereas in (53b) the result clause introduced by *that* can refer back to *so* into a noun phrase of about equal complexity.

The ungrammaticality of (53a) is predicted by Kayne's analysis of relative clauses, in which `extraposed' relative clauses are assumed to be stranded. Consider (54a) and its structure according to Kayne in (54b) (adapted from Kayne 1994, p.119, ex. (9)):

(54) a something that you should know about
b $[_{dp}\ D^0\ [_{cp}\ [_{dp}$ something] $[_{cp}$ that you should know about $t_i]]]$

When the CP *that you should know about* occurs in a sentence-final position that is non-adjacent to *something*, *something* is supposed to be moved out of the specifier position of the CP into its position in the matrix clause:

(55) I saw something$_i$ yesterday $[_{dp}\ D^0\ [_{cp}\ t_i\ [_{cp}$ that you should know about t_i]]]

[10] Note that this contrast is absent in Dutch (cf. Kaan 1992).

In short, Kayne (1994) proposes a stranding analysis for relative clauses.[11] The example in (53a) is ungrammatical. He accounts for this as follows. The relative clause *who work for the government* would be stranded by *many conspirators* when the constituent *plots by many conspirators* is moved into subject position. However, *many conspirators* is in the specifier position of the relative clause, and hence would not form a constituent with *plots by*. The movement of *plots by many conspirators* that is needed to account for the observed word order in (53a) cannot take place.

Since the sentence-final occurrence of the result clause in (53b) is grammatical, in contrast to the ungrammaticality of stranding the relative clause in (53a), Kayne (1994, p.126) concludes that sentence-final occurrence of result clauses does not involve stranding.

Instead, Kayne (1994) proposes to assume the following structure for example (53b):

(56) [[plots by **so** many conspirators have been hatched] [**that** [the government is helpless]]]

That is to say, the complementizer *that* of the result clause is the head of the sentence as a whole, and *plots by so many conspirators have been hatched* occupies the specifier position of that CP.

In some cases, the subject of the result clause can corefer with a subject pronoun in the matrix clause. If that is the case, Kayne assumes the structure in (56) (cf. (57a') below). In cases where no coreferentiality can be established, Kayne (1994, p.127) assumes that only part of the matrix clause occupies the specifier position of the result clause:

(57) a She$_i$ has so much money now that Mary$_i$ is the envy of all her classmates
a' [[she$_i$ has so much money now] [that [Mary$_i$ is the envy of all her classmates]]]
b He$_i$ has so much money that John$_{j/*i}$ doesn't know what to do with it
b' he$_i$ has [[so much money] [that [John$_{j/*i}$ doesn't know what to do with it]]]

[11] Since then, Kayne proposed an alternative to relative clause stranding. This is not relevant to the present discussion, however, since Kayne's (1994) analysis of relative clauses is only used here as the setting from which he derives his analysis of result clauses.

In (57a), *Mary* is not c-commanded by the pronoun *she*, and coreferentiality is possible. In (57b), *John* is c-commanded by *he*, and hence coreferentiality is out of the question.

A strong conceptual argument against Kayne's analysis is that it blurs the distinction between matrix clause and subclause: in the structures (56) and (57a) above, what we are used to call the matrix clause is in fact part of the subclause. That is to say, the matrix clause suddenly features as the specifier of the complementizer of the subclause.[12]

Kayne (1994) does not provide an answer to the question of how the result clause and the degree element *so* are associated with each other, and he does not consider result clauses with multiple antecedents.

4.4 Conclusion

In this chapter, several analyses were discussed that concern the generation site of result clauses and other clauses dependent on degree elements.

Given the dependence of result clauses on the degree head that seems to select them, it makes sense to assume that the clause is generated as a sister to the selecting head. To arrive at the sentence-final position it usually occupies, the result clause will have to be moved there.

However, there are a number of arguments against base-generating the result clause as sister to (or elsewhere within the projection of) the associated degree head. Andrews (1975) provides examples of comparatives and result clauses with split-antecedents. He argues that comparatives and result clauses with split-antecedents cannot be extraposed from within the phrases they allegedly originate in, because relating them to one of the phrases they are associated with yields

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[12] In chapter 6 some Frisian examples will be discussed in which the result clause can have matrix clause word order: specifically, it can have the finite verb in second position (V2):

(i) mar dat leit er jo **sa** dùdlik ùt, **dat** sa'n Frysk wiif KRIGE$_{v2}$ it op 'e simmels
but that lays he you so clearly out that such+a Frisian woman gets it on the nerves
`but he explains it to you so clearly that a Frisian woman like that gets it on the nerves' (Overdiep 1932, pp. 41, 44)

Overdiep (1932) suggests that in those cases we have two coordinated clauses. The coordinating element would be *dat* `that', which, at first sight, is the subclausal complementizer.

I will introduce a conjunction analysis of result clauses in chapter 5 in which they can indeed by conjoined with the matrix clause. If Overdiep is correct in that it is *dat* which is the coordinating element, I arrive at the same structures as presented by Kayne (1994) for those cases in which he suggests that the whole matrix clause occurs in the specifier of the subclausal complementizer. However, the phrasal category that matrix clause and result clause are part of in my analysis is a Conjunction Phrase, which would have *dat* as a head. In other words, I do not assume that the matrix clause is a specifier in the subclause.

ungrammaticality or wrong interpretations. In addition, Rouveret (1978) argues that if result clauses are extraposed, i.e. moved from within a phrase to the end of the sentence, these movements should be subject to Subjacency. He shows that in French result clauses are not subject to Subjacency, hence cannot involve movement.

These counterarguments are sufficient by themselves to try to find an alternative to degree phrase-internal generation of result clauses. In the framework that is adopted in this thesis there is yet another reason to look for an alternative. Once we hypothesize that rightward movement and adjunction are not a part of syntax anymore, degree phrase internal generation of sentence-final clauses leads to an analysis in which several as yet unmotivated movements and projections are needed.

However, the alternative analyses provided by Andrews (1975) and Rouveret (1978) still involve right-adjunction of the dependent clauses. In Kayne (1994) an alternative is presented that is compatible with a theoretical framework in which rightward movement and adjunction to the right of a projections are not allowed. In his proposal the complementizer introducing the result clause is the head of a construction in which the matrix clause, or part of it, occupies the specifier position. It is tempting to simply take over Kayne's analysis of result clause constructions, but this has the serious disadvantage of blurring the distinction between the matrix clause and subclauses. In the next chapter, therefore, I will develop an alternative that is different from Kayne's, but is still compatible with his (1994) framework.

Chapter 5

Result Clauses

part II

A Conjunction Analysis

5.1 Introduction

In the preceding chapter several earlier analyses of result clause constructions like (1) have been presented.

(1) a **Zo**veel mensen kwamen op het feest **dat** de kamer te klein was
so-many people came on the party that the room too small was
`So many people came to the party that the room was too small'

b Janna heeft [**zo**veel boeken] gelezen [**dat** ze niet op één plank zouden kunnen staan]
Janna has so-many books read that they not on one shelf would can stand
`Janna read so many books that they would not fit on one shelf'

c Ik heb **zo** hard gerend **dat** ik een uur buiten adem was
I have so fast run that I an hour out-of breath was
`I ran so hard that I was out of breath for an hour'

We saw that result clause constructions exhibit the following properties. First, result clauses usually occur at the end of the (smallest) clause in which the associated degree phrase occurs. Second, the degree phrase can occupy a position in almost any constituent in that clause, and (third) be deeply embedded in the constituent at issue. Fourth, however, result clauses cannot be seperated from their associated degree phrase by non-complement CP boundaries. Fifth, result clause constructions allow multiple antecedents. That is to say, one result clause can be associated with more than one degree head. These antecedents need not be part of a single clause.

These properties will be addressed in a little more detail in the next section. Along with the presentation of the result clause examples, I will show that there are a number of other constructions that exhibit similar properties. These constructions are noun phrase (DP) plus relative clause combinations, comparative constructions and noun phrase coordinations.

The striking similarities in behaviour among the four constructions provide one of the arguments for the structural analysis of result clauses to be presented in this chapter. The observation that noun phrase coordination, comparatives, noun phrase plus relative clause and result clause constructions behave alike suggests that they involve the same structural configuration (viz. a conjunction phrase), despite the fact that the latter two are usually considered to be instances of subordination, rather than coordination.[1]

5.1.1 A sketch of the structural configuration

The idea that coordination and subordination are structurally alike has been suggested by several authors in the past few years (cf. Goldsmith 1985, Munn 1992, Johannessen 1993, Wilder 1994, Kayne 1994, etc.). Specifically, these authors argue that coordination does not involve a symmetric structure, but an asymmetric one like any X-bar structure:[2,3]

(2) [ZP [& [YP]]]

I will follow their suggestion that coordination is asymmetric, much like subordination, and assume that both types of conjunction make use of the same structural configuration. Hence, two coordinated noun phrases and a noun phrase plus relative clause will involve the same structure (cf. Koster 1996), on a par with the configuration underlying result clause constructions.

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1 I will use the term *conjunction* as overarching both coordinating and subordinating constructions, and **not** as synonymous to coordination.

2 Munn's (1992) analysis is different. He proposes that the conjoining head and the second conjunct form a Boolean Phrase (BP), which is right-adjoined to the first conjunct.

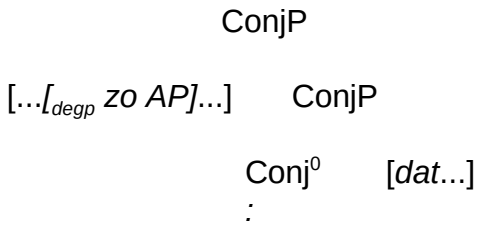
3 The idea that the coordinator *and* is a head that forms a constituent with the clause (or phrase) it introduces dates back to Ross (1967, p.90). He does not assume *and* projects, but has it introduced by the projection rule in (i) and subsequently adjoined to each of the clauses in the structure.

(i) S -> *and* S^n where n >_ 2
or

In the preceding chapter I presented several earlier analyses of result clauses, and concluded that result clauses are not generated inside the degree phrase. The analysis to be defended here is one in which result clauses are base-generated in clause-final position.

The structure underlying my conjunction analysis is the following:

(3)



In this structure the constituent in the specifier position of the conjunction phrase will vary across examples (e.g. it may be AgrOP, or TP etc.). I assume that the conjunction phrase is transparant, in the sense that it behaves as if it were the constituent in its specifier position (see the analysis in section 5.3 below):

(4) a Hij heeft **zo**veel boeken gelezen **dat** ze niet op één plank zouden passen[4]
he has so-many books read that they not on one shelf would fit

b [$_{conjp}$ [... [**zo**veel boeken] gelezen] [: [$_{res.cl.}$ **dat**...]]]

The colon as head of the conjunction phrase is adopted from Koster's (1996) work on relative clause extraposition as a form of parallel construal akin to asyndetic coordination. The four constructions to be discussed in the next section differ in the choice of the conjoining head. I will adopt Koster's colon for relative and result clause constructions. Coordination will have the coordinator *en* `and' as conjoining head, and comparatives *dan* `than'.

Up till now, we have mainly been concerned with the structural aspects of the analysis. However, the result clause needs to be licensed as well.

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[4] See chapter 3 of this thesis on the internal structure of degree phrases, and why *zo* `so' is combined with *veel* `much/many' in almost all examples.

5.1.2 Licensing relations

In chapter 4 I rejected an extraposition analysis in which the result clause is generated within its antecedent degree phrase (and then moved to sentence-final position). Although such an analysis is arguably incorrect, it does have the advantage of providing a structural relation that reflects the dependency of the subclause with respect to the degree head.

Within a conjunction phrase analysis, there are two aspects to a proposal of how the result clause is licensed.[5]

First, as was observed at the end of the previous section, the conjoining head varies across the constructions we are looking at. That is, a comparative combines with the conjoining head *than*, whereas a degree phrase headed by *so* occurs with a lexically empty head:

(5) [... faster... [than [...]]]
[... so fast... [: [that ...]]]

This means that the degree phrase and the relevant conjoining head has to be matched. This is the first requirement for the licensing proposal.

Second, in the various constructions at issue the second conjunct is of a different nature. For example, a result clause that is dependent on *so* or on a comparative is a finite clause, whereas a clause that is dependent on *too* is non-finite:

(6) a Janna heeft zo hard gelopen [dat ze niet meer rustig kan ademhalen]
Janna has so fast walked that she not more calmly can breath-take
`Janna ran so fast that she cannot breath calmly anymore'
b * Janna heeft zo hard gelopen [om nog rustig adem te kunnen halen]
Janna has so fast walked to still calmly breath to can take
*`Janna ran so fast to be able to breath calmly anymore'[6]

---

[5] In the coming sections I focus on the similarities between coordination, comparison, relative clause and result clause constructions. This is not meant to imply that I ignore their differences. Some of these differences are presumably connected to the way in which the second conjunct in each construction is related to the phrase (in the first conjunct) that it depends on. In some of the properties of the four constructions (to be discussed in this chapter) these differences are expressed.
In this thesis I confine myself mainly to the analysis as it pertains to degree phrases.

[6] The intended meaning is not that Janna ran fast so that she could breath calmly.

(7) a Janna heeft te hard gelopen [om nog rustig adem te kunnen halen]
Janna has too fast walked to still calmly breath to can take
`Janna ran too fast to be able to breath calmly anymore'
b * Janna heeft te hard gelopen [dat ze niet meer rustig kan ademhalen]
Janna has too fast walked that she not more calmly can breath-take
*`Janna ran too fast that she cannot breath calmly anymore'

I propose that the head of the conjunction phrase functions as an intermediary in matching the type of the degree phrase and the second conjunct. That is, since the second conjunct is the complement of the conjoining head, the head selects the type of clause that matches with the type of degree phrase. Matching the degree phrase and the subclause in the second conjunct is the second requirement for the licensing proposal.

Given these two requirements on licensing a conjunction phrase, I propose the following analysis.

In chapter 3 I adopted Zwarts' (1992) analysis of degree phrases, in which heads like *too* or *so* are operators that Theta-bind a variable in the Theta-grid of their complement. Previous theories on result clauses (cf. chapter 4) assume that *so* undergoes Quantifier Raising at LF (cf. Guéron & May 1984, Rouveret 1978). The authors assume that *so* raises to the first dominating CP node (or in some cases to the top of the matrix CP node). From its derived position it licenses the result clause that depends on it.

In the conjunction phrase analysis proposed here, however, the domain of licensing appears to be the conjunction phrase itself. This may amount to a (matrix) CP domain, but may also involve just a part of a clause. For instance, when a conjunction phrase as a whole is topicalized, the result clause can be licensed within the topicalized constituent, because the sentence is grammatical (cf. section 5.4):

(8) [$_{conjp}$ **Zó**veel boeken geschreven **dat** ze niet op deze plank zouden passen] heeft ze niet
so-many books written that they not on this shelf would fit has she not

However, extracting the phrase containing the degree head from the specifier of the conjunction phrase creates a configuration in which the degree head cannot license the result clause within the conjunction phrase. As predicted when the domain of licensing is taken to be ConjP, this yields an ungrammatical example (cf. section 5.9):

(9) a Zij heeft **meer mannen dan vrouwen** gezien
she has more men than women seen
`She saw more men than women'
b * **Meer mannen** heeft zij **dan vrouwen** gezien

(10) a ?* Ze had al lang [**zoveel boeken dat ze niet op één plank passen**] gelezen
she had already long so-many books that they not on one shelf fit read
`She hadn't read so many books that they don't fit on one shelf by far'
b * **Zoveel boeken** had ze al lang **dat ze niet op één plank passen** gelezen

To capture these observations and the two requirements noted above, I propose that the degree phrase (including the operator) raises and adjoins to the top node of the constituent in the specifier position of ConjP. As a result of this, the whole specifier constituent is marked, so to speak, by the degree phrase.

Note that it is not unknown for a constituent to be marked by a particular element contained in it. In WH-movement, a WH-word may pied-pipe a larger constituent along (cf. (11)). Similarly, in comparatives, the degree operator can be contained in the object noun phrase, whereas the actual comparison concerns a larger part of the clause than just that object (cf. (12)):

(11) [De vader [van [**welke** vrouw]]] heb je gezien?

(12) Hij heeft [jou [**meer** koekjes] gegeven] dan haar
he has you more cookies given than her
`He gave more cookies to you than to her'

Once the specifier of the conjunction phrase is marked by the degree operator, the degree operator and the head of the conjunction can be matched under specifier-head agreement. The head of the conjunction phrase takes care of selecting the appropriate type of complement: a non-finite clause if the degree head is *too*, a finite clause if the degree head is *so* etc.

Thus, movement of the degree phrase to adjoin to the specifier constituent of the conjunction phrase ensures that the degree head and the conjoining head can be matched and, indirectly, ensures that the degree head and the dependent clause can be matched.

Note that, for the degree phrase to be able to adjoin to the constituent in [Spec,ConjP], say XP, it must be dominated by XP. That is, the degree phrase that invokes the conjunction phrase structure, must be contained in the specifier conjunct. In the forthcoming sections we will see that the constituent in the specifier position can be a CP, but a lower projection as well. In fact, the only two restrictions seem to be that: (1) the degree phrase (or the noun phrase that a relative clause is associated with, for that matter) must be part of the specifier constituent and (2) it must occur in a position from which it can move up to adjoin to the specifier constituent.

Before turning to the details of the properties that result clause constructions, relative clause constructions, coordination and comparatives have in common, let us look at how the analysis put forth in the previous and the present subsection is motivated.

5.1.3 Motivation

The analysis proposed in this chapter is motivated both empirically and conceptually.

In what follows, I will discuss several properties of result clause constructions and show that they behave similarly to noun phrase plus relative clause constructions, noun phrase coordination and comparatives. After presenting each property, I show how the proposal above accounts for it. Additional empirical motivation comes from negative polarity items that can be licensed from outside of their own clause (cf. chapter 6).

Conceptual motivation for the analysis is related to the similarities in behavior of coordination, comparison, relative clause and result clause constructions. Since constructions of a coordinative nature (viz. DP-coordination and comparatives) appear to behave similarly to constructions of a subordinative nature (viz. relative and result clauses) with respect to several phenomena that can be accounted for structurally, the simplest assumption one can make is that they do in fact involve the same structural configuration. However, there are several criteria by which coordinating and subordinating conjunctions are supposedly distinguished. None of these criteria applies without exceptions. For example, asymmetric coordination (like *[John and me] went to the market* or *He is [a Republican and proud of it]*) seems to exemplify an intermediary form, in between `pure' (symmetric) coordination and `pure' (asymetric) subordination. Such

intermediary instances of conjunction (in which the structure is asymmetric, but no subordination is involved) are unexpected if there is indeed a sharp distinction between coordination and subordination. In contrast, if there is a continuum from constructions that are symmetric in every respect (e.g. *a book and a pencil*) to constructions that are asymmetric to the extent that one conjunct is entirely subordinate to the other, these intermediary forms have a rightfull place along the line. This provides additonal motivation for an analysis in which noun phrase coordination and degree phrase - result clause constructions share the same structural configuration, even though they may behave a little different within that structure.[7]

Other conceptual motivation comes from the following consideration. Looking at result clause constructions, we may view them as causatives, in the sense that the effect expressed by the result clause is caused by something that is indicated in the main clause. Interestingly, Song (1996, pp. 35-49) provides examples of causative constructions that make use of a conjunction. In addition, Español-Echevarría (1995) proposed to view purpose clauses as complements of a preposition *CAUSE*. This analysis can also be analysed as an instance of a conjunction phrase, if we consider this *CAUSE* to be an abstract conjoining head. Español-Echevarría provides the initial structure in (13b) for (13a):

(13) a John put the books on the shelf to please his mother
b $[_{vp1}$ John _ $[_{pp}$ $[_{vp2}$ the books put on the shelf] [*CAUSE* [to please his mother]]]]

These analyses of causatives constructions as involving conjunction support the conjunction analysis of result clauses proposed here.

A final conceptual argument for the conjunction phrase analysis is that the structural configuration is strictly binary branching.

Additional evidence for the structural configuration of the conjunction analysis proposed in this chapter is provided by Frisian result clauses. They are shown to behave exactly as predicted by the conjunction analysis with respect to main clause properties like verb second (cf. chapter 6): result clauses that exhibit such main clause features as verb second word order will be shown to be conjoined

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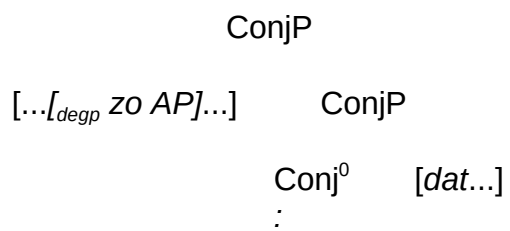
[7] This was also proposed by Munn (1987, 1992), as in the following quotation: "Suppose now that a coordinating conjunction and [a] subordinating conjunction differ semantically but have identical syntactic configurations." (Munn 1992, p.18).

with the matrix clause. Their being conjoined with the matrix clause apparently allows them to behave like a main clause themselves. Given that two coordinated main clauses have the same structure (cf. (2) above), it is not too surprising under a conjunction analysis that a result clause may have main clause features. If result clauses were right-adjoined to the matrix clause (as in older analyses), however, their main clause status in Frisian would be extremely weird. In short, Frisian result clauses provide empirical motivation for the structure in (2)/(3), because all predictions about whether or not they can have verb second are neatly borne out. Moreover, they also provide conceptual motivation by arguing against a right-adjunction analysis of result clauses.

5.1.4 Summary

In short, I propose to analyse result clauses as the second conjunct in a conjunction phrase. The degree phrase with which a result clause is associated is part of the specifier constituent of the conjunction phrase:

(14)



The degree phrase covertly moves up and adjoins to the specifier of the conjunction, thereby marking the specifier such that the match between degree head and conjoining head can be checked in specifier-head agreement. The head of the conjunction phrase functions as an intermediary in matching the degree head and the dependent clause.

The next section will present an overview of the result clause properties that will be discussed in more detail in sections 5.3 to 5.11. The presentation of each property is followed by a discussion of how the proposed conjunction phrase analysis accounts for it.

5.2 Overview of properties to be discussed

The properties discussed in the coming sections are the following:

1 clause-final occurrence of result clauses, relative clauses and second conjuncts (in noun phrase coordination and comparatives);
2 a clause-final result clause, relative clause or second conjunct can be associated with an antecedent (degree phrase or noun phrase) in several constituents of a clause;
3 the antecedent degree phrase or noun phrase can be deeply embedded in the constituent it is part of;
4 result clauses, relative clauses, and to a lesser extent noun phrase coordination and comparison, allow multiple antecedents;
5 the antecedent degree phrase or noun phrase cannot be separated from the associated clause or second conjunct by a CP node that is not a complement CP;
6 in sentences with more than one result clause, relative clause, coordination or comparative construction, the dependencies are nested. For instance, a relative clause associated with a direct object noun phrase will precede a relative clause that is associated with a subject noun phrase;
7 if the four constructions at issue occur in the middle-field (which is only marginally possible with result clauses), it is ungrammatical to topicalize the (constituent containing the) antecedent noun phrase or degree phrase when the second conjunct or subclause is not part of the topicalized material;
8 clause-final result clauses, relative clauses and second conjuncts cannot be topicalized if the antecedent is not topicalized as well;
9 result clauses, relative clauses and second conjuncts in noun phrase coordination and comparatives are islands for extraction.

These properties will be discussed and analyzed in the next sections.

5.3 Clause-final occurrence

Result clauses usually appear in sentence-final position. Despite their dependency on a degree item within the clause, they cannot readily appear close to that item:[8]

[8] The result clause's dependency on the degree head has lead some authors to analyses in which the result clause is generated as sister to the degree element (cf. chapter 4 of this thesis). Their sentence-final position was supposed to be the result of extraposition. See chapter 4 for arguments against this type

(15) a?? Ik heb [**zo**veel boeken **dat** ze niet op één plank zouden kunnen staan] gelezen
I have so-many books that they not on one shelf would can stand read

b Ik heb [**zo**veel boeken] gelezen [**dat** ze niet op één plank zouden kunnen staan]
I have so-many books read that they not on one shelf would can stand
`I read so many books that they would not fit on one shelf'

In their sentence-final position, result clauses follow `sentence-final' adverbs, e.g. *gisteren* `yesterday' in (16):

(16) Ik heb **zo** hard gerend gisteren **dat** ik een uur buiten adem was
I have so fast run yesterday that I an hour out-of breath was
`I ran so hard yesterday that I was out of breath for an hour'

They also follow complement clauses, cf. *dat ze ziek was* `that she was ill' in (17):

(17) Hij zei **zo** zacht dat ze ziek was **dat** niemand hem hoorde
he said so softly that she ill was that nobody him heard
`He said so softly that she was ill that nobody heard him'

In addition, result clauses follow relative clauses that are associated with (for instance) the sentence subject (cf. Gueron & May 1984):

(18) a Everybody is **so** strange [whom I like] [**that** I can't go out in public with them]
b * Everybody is **so** strange [**that** I can't go out in public with them] [whom I like]

In (19) the Dutch translations of (18) are given:

(19) a ? Iedereen is zo vreemd [die ik ken] [dat ik niet met ze in het openbaar wil verschijnen]
everyone is so strange that I know that I not with them in

---

of analysis.

the public want appear
`Everyone is so strange [whom I know] [that I do not want to appear in public with them]'

b * Iedereen is zo vreemd [dat ik niet met ze in het openbaar wil verschijnen] [die ik ken]

Even though the (19a) example is not very good, it is clearly better than the ungrammatical (19b).

With respect to occurrence in the middle field, relative clauses and second conjuncts in noun phrase coordination and comparatives differ from result clauses; they can perfectly well occur both in the middle field and in sentence-final position:[9]

(20) a Die man heeft **films en documentaires** gemaakt
that man has movies and documentaries made
`That man made movies and documentaries'
a' Die man heeft **films** gemaakt **en documentaires**
that man has movies made and documentaries

b Die mannen hebben **de foto's die verloren gingen** gemaakt
those men have the fotos that lost went made
`Those men made the pictures that got lost'
b' Die mannen hebben **de foto's** gemaakt **die verloren gingen**
those men have the fotos made that lost went

c Die man heeft **meer films dan documentaires** gemaakt
that man has more movies than documentaries made
`That man made more movies than documentaries'
c' Die man heeft **meer films** gemaakt **dan documentaires**
that man has more movies made than documentaries

d ?* De bioscopen hadden **zoveel kaartjes dat de regisseur tevreden was** verkocht
the cinemas had so-many tickets that the director satisfied was sold
d' De bioscopen hadden **zoveel kaartjes** verkocht **dat de regisseur tevreden was**
the cinemas had so-many movies sold that the director satisfied was
`The cinemas sold so many tickets that the director was satisfied'

---

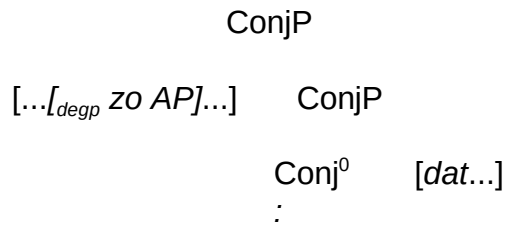
9 In section 5.9 I will show that in all four constructions it is not possible to prepose the antecedent when the whole structure occurs in the middle-field.

In comparing result clause constructions with relative clauses, noun phrase coordination and comparatives, I will mainly look at their sentence-final occurrences.

ANALYSIS

In the first section of this chapter I introduced the conjunction phrase:

(21)



This conjunction phrase, with a different label, has been proposed for coordination by (among others) Johannessen (1993). The current section (i.e. this subsection an the next ones) shows that result clause constructions and noun phrase coordination (and relative clause constructions and comparatives) behave alike with respect to a number of properties. Therefore, it is desirable to assign result clause constructions the same structural configuration as coordination; this is the first hypothesis of the conjunction phrase analysis of result clauses.

Looking more directly at the content of this subsection, we saw that all four constructions under consideration can be split up: in coordination the two conjuncts can appear adjacent, as in (22a), or the second part can appear sentence-finally, as in (22b):

(22) a Die man heeft **films en documentaires** gemaakt
that man has movies and documentaries made
`That man made movies and documentaries'
b Die man heeft **films** gemaakt **en documentaires**
that man has movies made and documentaries

The structure for the (22a) example is straightforward: the conjunction phrase as a whole occupies [spec,AgrOP]. For the (22b) example, I will follow Koster's (1996) work on relative clauses and hypothesize that what occupies the specifier position of the conjunction phrase is AgrOP (recall that the conjoining head is *en* `and'). Koster assumes that the second conjunct is a full phrase (AgrOP in this case), in

which only a part is spelled out lexically. That is to say, the rest of the phrase is deleted under identity with the AgrOP in the first conjunct:

(23) a Die man heeft [$_{agrop}$ [$_{conjp}$ films [en [documentaires]]] gemaakt]
that man has movies and documentaries made
b Die man heeft [$_{conjp}$ [$_{agrop}$ films gemaakt] [en [documentaires]]]
that man has movies made and documentaries

b' .....

ConjP

AgrOP ConjP
films gemaakt

Conj^{0} AgrOP
en [documentaires _]

Analogously, in a result clause construction in which the degree head is contained in the object constituent, the result clause will be conjoined with AgrOP (cf. the next subsection as well). Note however, that for subclauses no construal under parallellism is needed. In other words, the clause by itself is the second conjunct:[10]

(24) De bioscopen hadden [$_{conjp}$ [$_{agrop}$ **zo**veel kaartjes verkocht] [: [**dat** de regisseur tevreden was]]]
the cinemas had so-many movies sold
that the director satisfied was
`The cinemas sold so many tickets that the director was satisfied'

As far as the overall structure of the clause is concerned, I assume that the conjunction phrase is transparent, in that it behaves exactly like its specifier. Johannessen (1993) was one of the authors who proposed to analyse coordination as involving a X-bar structure like the conjunction phrase above.[11] She argues on the basis of asymmetric coordination examples (like (25a) below), that the conjunction phrase as a whole inherits the features from its specifier constituent. This is indicated by the coindexing in (25c), which I will mostly leave out:

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[10] The result clause can also be conjoined with a structurally higher phrase. We will see in chapter 6 on Frisian result clauses that it is possible for a result clause to be conjoined with the matrix clause, even if the degree phrase occurs in a structurally low constituent.

[11] Johannessen (1993) coined it Coordination Phrase (CoP).

(25) a He says he saw [John and I] last night
(Quirk et al. 1985, p.338)

b $[_{conjp}$ John [and [I]]]
c $[_{conjp[xp]}$ XP [and [YP]]]

This is an extremely important aspect of the analysis, since it is the specifier which is mostly influenced by the structural environment of the conjunction phrase. In result clause constructions, then, the specifier constituent of the conjunction phrase (e.g. AgrOP) determines the structural status of the conjunction phrase as a whole.

In the next section we will see that the antecedent degree phrase headed by *zo* `so' can be contained in almost any constituent of the matrix clause. In general, the higher (in a structural sense) the constituent containing the degree phrase occurs, the larger the constituent in the specifier of the conjunction phrase will be. Although this may seem ad hoc at this point, the structures will be extensively motivated in the coming sections.

5.4 Distribution of the antecedent

Even though the result clause appears sentence-finally most of the time, it can be associated with an antecedent degree phrase that may occur in several constituents of a clause:

(26) a **Zo**veel mensen waren gekomen **dat** de kamer te klein was
so-many people were come that the room too small was
`So many people came that the room was too small'
(subject)

b Ze aten **zo**veel kaas **dat** ze misselijk werden
they ate so-much cheese that they sick got
`They ate so much cheese that they got sick'
(direct object)

c Hij heeft **zo**veel mensen een boek gegeven **dat** hij blut is
he has so-many people a book given that he broke is
`He gave a book to so many people that he's broke'
(indirect object)

d Hij is **zo** lang **dat** hij over iedereen heen kijkt
he is so tall that he over everybody PRT looks
`He is so tall he can look over everybody'
(predicative degree phrase)

e Hij is **zo**'n bullebak **dat** iedereen hem uit de weg gaat
he is so-a bully that everyone him out the way goes
`He is such a bully that everyone stays out of his way'
(predicative noun phrase)

f De deur is **zo** fel rood **dat** 't m'n ogen zeer doet
the door is so bright red that it my eyes hurt does
`The door is so brightly red that it makes my eyes hurt'
(adverbial modifying predicative degree phrase)

g Janna loopt **zo** snel **dat** niemand haar kan bijhouden
Janna walks so fast that noone her can up-keep
`Janna walks so fast that noone can keep up with her'
(adverbial degree phrase)

h Oude port wordt in **zo**veel huizen gedronken **dat** het niet meer exclusief te noemen is
old port is in so-many houses drunk that it not more exclusive to call is
`Old port is drunk in so many households that you can't call it exclusive anymore' *(in adverbial PP)*

Zo `so' can also occur as an adverbial in itself with a meaning like `in such a way', as in (27) below:[12]

(27) Je moet medicijnen **zo** opbergen **dat** peuters er niet bij kunnen
you must medicines so put-away that toddlers there not at can
`Medication must be put away such that toddlers can't reach it'
(as adverbial)

Looking at sentence-final relative clauses and second conjuncts in coordination and comparatives, they can be associated with an antecedent in almost any constituent in a clause as well. I will provide some examples below, but leave it to the reader to construct a full paradigm.

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[12] The degree head picks out a subset: out of all the ways one can put away medication, choose one out of the subset of those ways that have the result that children can not reach the medication.

(28) ANTECEDENT IN SUBJECT POSITION

a **Mannen** bewonderen deze film (,) **en vrouwen**
men admire this movie and women

b **DIE mannen** bewonderen deze film **die zich er in herkennen**
those men admire this movie that REFL there in recognize
`Those men admire this movie who recognize themselves in it'

c **Meer mannen** bewonderen deze film **dan vrouwen**
more men admire this movie than women

d **Zoveel mensen** bewonderen deze film **dat de regisseur zich gevleid voelt**
so-many people admire this movie that the director REFL flattered feels
`So many people admire this movie that the director feels flattered'

Moreover, just like in result clause constructions, a second coordinate, a relative clause and comparative phrase/clause can be associated with an object DP:

(29) ANTECEDENT IN OBJECT POSITION

a Die man heeft **films** gemaakt **en documentaires**
that man has movies made and documentaries
`That man made movies and documentaries'

b Die mannen hebben **de foto's** gemaakt **die verloren gingen**
those men have the fotos made that lost went
`Those men made the pictures that got lost'

c Die man heeft **meer films** gemaakt **dan documentaires**
that man has more movies made than documentaries
`That man made more movies than documentaries'

d De bioscopen hadden **zoveel kaartjes** verkocht **dat de regisseur tevreden was**
the cinemas had so-many movies sold that the director satisfied was
`The cinemas sold so many tickets that the director was satisfied'

Examples in which the antecedent is an adverb are given below (note that the relative clauses are restricted to those examples in which the antecedent is a determiner phrase):

(30) ADVERB AS ANTECEDENT

a Janna heeft **snel** gelopen **en elegant**
Janna has fast walked and elegantly
`Janna walked fast and elegantly'

b ? Janna heeft **sneller** gelopen **dan elegant**
Janna has faster walked than elegantly

b' Janna heeft **eerder snel** gelopen **dan elegant**
Janna has sooner fast walked than elegantly
`Janna walked fast, rather than elegantly'

c Janna heeft **zo** snel gelopen **dat niemand haar kon bijhouden**
Janna has so fast walked that noone her could up-keep
`Janna walked so fast that noone could keep up with her'

In sum, we saw that the degree phrase associated with a result clause can have many functions and positions in a clause. I also indicated that the same holds for noun phrase antecedents of sentence-final relative clauses, for the second conjunct in noun phrase coordination and in comparatives.

Now let us consider the analysis of result clauses with respect to the distribution of the antecedent.

ANALYSIS

In the analysis proposed here, a result clause is conjoined with part of the matrix clause, or with the matrix clause in its entirety. The position of *zo* `so' in a particular constituent in the matrix clause will in part determine the structural configuration of the construction. That is to say, an antecedent in a structurally high position (e.g. the subject) can give rise to a structure that differs from that of a clause with an antecedent in a structurally lower position (e.g. the object).

For instance, when the antecedent of a result clause is (part of) the subject noun phrase, the entire matrix clause, or at least AgrSP, will be in the specifier position of the conjunction phrase. However, when the antecedent of a result clause is the object noun phrase, it may be that the specifier of the conjunction phrase consists of only the AgrOP (cf. (31)):[13]

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[13] The differences between result clauses that are alternatively construed at a higher or at a lower level of the matrix clause are noted by Zwarts (1978) as well. Zwarts pointed out that the difference in coreference between the pronouns (ib) and (iib) is related to the position of the result clause:

(i) a *Karel* ambieerde zo'n goede betrekking dat *hij* voor altijd rijk zou zijn

(31) a **Zo**veel mensen hebben *Pride and Prejudice* gekocht **dat** het binnen een week uitverkocht was
so-many people have Pride and Prejudice bought that it within a week out-sold was
`So many people bought *P&P* that it was sold out within a week'
b [$_{conjp}$ [$_{agrsp}$ zoveel mensen hebben P&P gekocht] [: [dat...]]]

(32) a Vestdijk heeft **zo**veel boeken geschreven **dat** ze niet op deze plank zouden passen
Vestdijk has so-many books written that they not on this shelf would fit
`Vestdijk wrote so many books that they would not fit on this shelf'
b Vestdijk heeft [$_{conjp}$ [$_{agrop}$ zoveel boeken geschreven] [: [dat...]]]

The latter assumption is corroborated by topicalization of the entire conjunction phrase, as in (33):

(33) [$_{conjp}$ **Zó**veel boeken geschreven **dat** ze niet op deze plank zouden passen] heeft ze niet
so-many books written that they not on this shelf would fit has she not

Example (31), in which the sentence-final result clause is associated with *zo* `so' in the subject noun phrase, is repeated below. If it is correct that the whole AgrSP occupies the specifier position of the conjunction phrase, we would expect that it is not possible to topicalize the material in ArgOP together with the result clause, because they do not form a constituent together. This prediction is borne out, as (34b) shows:

Karel aspired such a good position that he for always rich would be
`Karel aspired to a position that is so good that he would be rich for ever'
b * *Hij* ambieerde zo'n goede betrekking dat *Karel* voor altijd rijk zou zijn
he aspired such a good position that Karel for always rich would be

(ii) a *Karel* ambieerde zo'n veeleisende betrekking dat *hij* zijn huwelijk heeft moeten verbreken
Karel aspired such a much-demanding position that he his marriage has must break
`Karel aspired to a position that turned out to be so demanding that he had to break up his marriage'

(ii) a *Hij* ambieerde zo'n veeleisende betrekking dat *Karel* zijn huwelijk heeft moeten verbreken
he aspired such a much-demanding position that Karel his marriage has must break

Zwarts proposes that the result clause in (ib) is a daughter of VP, whereas the result clause in (iib) is a daughter of S-bar (CP).

(34) a [$_{conjp}$ [$_{agrsp}$ **Zo**veel mensen hebben *Pride and Prejudice* gekocht [: [**dat** het binnen een week uitverkocht was]]]
so-many people have Pride and Prejudice bought that it within a week out-sold was
`So many people bought *P&P* that it was sold out within a week'

b * [$_{?p}$ *Pride and Prejudice* gekocht **dat** het binnen een week uitverkocht was] hebben **zo**veel mensen
Pride and Prejudice bought that it within a week out-sold was have so-many people

As such, topicalization of part of the clause plus the result clause provides a test for the position of the result clause. In addition, the grammaticality of topicalizing the material in AgrOP plus the result clause in (33) above shows that they form a constituent together. This provides support for the conjunction phrase analysis proposed here.

Another example in which a result clause can be conjoined with a part of the matrix clause is one in which the antecedent is a predicative degree phrase:

(35) a Die jongen is **zo** mager **dat** hij wel achter een rietje kan schuilen
that boy is so skinny that he PRT behind a reed can shelter
`That boy is so skinny that he could hide behind a reed'

b [**zo** mager **dat** hij wel achter een rietje kan schuilen] is die jongen
so skinny that he PRT behind a reed can shelter is that boy

As we will see in chapter 6, result clause constructions in Frisian clearly show their structural position by allowing Verb-second when they are conjoined with a matrix clause and not allowing it when they are conjoined with part of the matrix clause or with a subclause.

The next subsection shows that, in addition to its distributional freedom across various positions in a sentence (subject, object, etc.), *zo* `so' may even be deeply embedded in the constituent it is part of.

5.5 Embedded antecedents

In this section I look at the degree of embedding that an antecedent degree phrase allows without yielding an uninterpretable example. We will see that *zo* `so' can

be embedded very deeply in the constituent it is part of, and still be traceable for interpretation:[14]

(36) a [Plannen [van [**zo**veel samenzweerders]]] zijn ontdekt **dat** de regering hulpeloos lijkt
plans of so-many conspirators are discovered that the government helpless seems
`Plans of so many conspirators have been discovered that the government seems to be helpless'

b [De notulen [van [vergaderingen [van [**zo**veel samenzweerders]]]]] zijn ontdekt **dat** men eindelijk kan reconstrueren wie de leider is
the minutes of meetings of so-many conspirators are discovered that they finally can reconstruct who the leader is
`Minutes of meetings of so many conspirators have been discovered that they can finally reconstruct who the leader is'

The same degree of embedding is available to the antecedent of relative clauses and, to some extent, comparative and coordinative constructions. Consider the next examples of prepositional complements as first associates:

(37) a Zij heeft [met **Janna**] gepraat **en Pietje**
she has with Janna talked and Pietje
b Zij heeft [met **de man**] gepraat **die alles wist**
she has with the man talked that all knew
c Zij heeft [met **meer katten**] gespeeld **dan honden**
she has with more cats played than dogs
d Zij heeft [met **zo**veel mensen] gepraat **dat** iedereen haar kent
she has with so-many people talked that everyone her knows

The following set of sentences exemplifies that embedding in an adverbial PP is also possible:

(38) a Oude port wordt [in **hotels**] geschonken **en (in) café's**
old porto is in hotels poured and in pubs
`Old port is served in hotels and (in) pubs'
b Oude port wordt [in **dat hotel**] geschonken **dat aan het meer staat**

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[14] This subsection will only consider embedding in phrasal categories. Section 5.7 will look at examples in which the antecedent degree phrase is embedded in a subclause and separated from the result clause by a CP-boundary.

old porto is in that hotel poured that at the lake stands
`Old port is served in that hotel at the lake side'

c Oude port wordt [in **meer hotels**] geschonken **dan café's**
old porto is in more hotels poured than pubs
`Old port is served in more hotels than pubs'

d Oude port wordt [in **zoveel hotels**] geschonken **dat** het niet meer exclusief te noemen is
old porto is in so-many hotels poured that it not more exclusive to call is
`Old port is served in so many households that you can't call it exclusive anymore'

The antecedent degree phrase of a result clause, however, can be more deeply embedded than the examples of the other constructions above have shown so far:

(39) [De ouders [van [**zo**veel kinderen]]] zijn alleen **dat** complete gezinnen zeldzaam zijn
the parents of so-many children are alone that complete families rare are
`Parents of so many children are single that complete families are rare'

In English, the possibility of deeply embedding *so* contrasts with the observation that sentence-final relative clauses can not be associated with an embedded noun phrase, as (40) shows (cf. Guéron & May 1984, Kayne 1994):

(40) a * [Plots [by [**many conspirators**]]] have been hatched **who** work for the government
b [Plots [by [**so** many conspirators]]] have been hatched **that** the government is helpless

Interestingly, this contrast is absent in Dutch (cf. Kaan 1992):

(41) a [Plannen [van [veel **samenzweerders**]]] zijn ontdekt **die** voor de regering werken
plans of many conspirators are discovered that for the government work
b [Plannen [van [**zo**veel samenzweerders]]] zijn ontdekt **dat** de regering hulpeloos is
plans of so-many conspirators are discovered that government helpless is

As such, the antecedent of a relative clause in Dutch can be as deeply embedded as *zoveel kinderen* `so many children' in (39).

Now let us look at the same degree of embedding in noun phrase coordination and comparative cases. Examples like the following appear too complicated to process:[15]

(42) a ? Er zijn [vergaderingen [van [**meer** onschuldige samenzweerders]]] afgeluisterd [**dan** (van) coupe-plegers]
there are meetings of more innocent/harmless conspirators bugged than of coup-committers
`Meetings of more harmless conspirators are bugged than (of) people who commit coups'

b?? Er zijn [vergaderingen [van [**onschuldige samenzweerders**]]] afgeluisterd [**en coupe-plegers**]
there are meetings of innocent/harmless conspirators bugged and coup-committers
`Meetings of harmless conspirators are bugged and (of) people committing coups'

One of the reasons (42a,b) are slightly more difficult to interpret is that some kind of reconstruction is needed to get the reading that not the people who commit coups are bugged, but their meetings. That is to say, the noun phrase in the sentence-final second conjunct needs to identify with *a* noun phrase in the sentence, and, syntactically, it could be either *[$_{dp}$ the meetings]* or *[$_{dp}$ the harmless conspirators]*.[16]

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[15] Note that the example in (42) does not have the same meaning as the more accessible example in (i):

(i) ? Er zijn [**meer [vergaderingen [van [onschuldige samenzweerders**]]]] afgeluisterd [**dan van coupe-plegers**]
there are more meetings of innocent/harmless conspirators bugged than of coup-committers
`More meetings of harmless conspirators are bugged than (meetings of) people who commit coups'

In (42) it is the number of harmless conspirators and `coup committers' that is compared, in (i) it is the number of meetings that is compared.

[16] This is one of the differences between DP-coordination and comparatives on the one hand, and relative clauses and result clauses on the other hand. I will assume that differences like this arise from different licensing mechanisms for each construction, within the structural configuration that they share.

Moreover, it should be borne in mind that one of the factors that influences the ease in providing the correct interpretation is the degree to which the conjuncts are marked off from the rest of the clause.

In result clause cases, and to a lesser extent in comparatives, the degree phrase is clearly marked, and hence signals the construction that will follow, so to speak. Especially the degree head *zo* `so' is often stressed, marking the relevant constituents even more clearly.[17]

In relative clauses, linking is facilitated by the circumstance that the relative pronoun introducing the relative clause (at least in Dutch) has the same phi-features as the noun it refers back to:

(43) a de moeder die... `the mother$_{\text{non-neuter}}$ that$_{\text{non-neuter}}$'
b het kind dat... `the child$_{\text{neuter}}$ that$_{\text{neuter}}$'

However, there is no sign of any kind on the noun phrase to indicate that any associated relative clause is to follow later on. One factor that contributes to the ease of linking a relative clause to the associated noun phrase is the intonation pattern of an utterance.

In a coordination example like (42b) above, no explicit marking whatsoever is available to make it easier to link the second conjunct to the first. In emphatic coordination, however, both coordinates are introduced by lexical items that usually bear significant stress. That is, the associates are clearly marked and linking is facilitated, even though the examples with deeply embedded conjuncts are still not perfect:[18]

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17 Some result clause constructions can be `translated' into a combination of two main clauses (emphatic stress is indicated by capital letters):

(i) a Ik ben zo moe dat ik niet meer op m'n benen kan staan
I am so tired that I not more on my legs can stand
`I'm so tired that my legs cannot keep me upright anymore'
b Ik ben ZO moe; ik kan niet meer op m'n BENEN staan!
I am so tired I can not more on my legs stand

In the latter example, extra stress on *zo* `so' and exceptional stress in the final part of the second clause indicate the connection between degree of being tired and the effect of not being able to stand anymore. The next examples shows that the degree head can also be left out, provided the adjective *moe* `tired' is stressed:

(ii) Ik ben MOE! Ik kan niet meer op m'n BENEN staan!
I am tired I can not more on my legs stand

18 This observation is due to Jan Koster (p.c.).

(44) ?? [Vergaderingen [van [**zowel onschuldige samenzweerders**]]]] zijn afgeluisterd [**als coupe-plegers**]
meetings of as-well innocent/harmless conspirators are bugged as coup-committers
`Meetings of harmless conspirators are bugged *as well as* people committing coups'

(45) ?? [Vergaderingen [van [**én onschuldige samenzweerders**]]]] zijn afgeluisterd [**én coupe-plegers**]
meetings of AND innocent/harmless conspirators
are bugged AND coup-committers
`Meetings of *both* harmless conspirators are bugged *and* people committing coups'

In sum, we saw in this section that all four constructions allow the first associate to be embedded in a constituent to at least some degree.[19] There are a number of factors that facilitate the link between the first (embedded) and the second (sentence-final) associate, such as the extent to which they are marked off from the rest of the sentence by, for instance, stress patterns. The clearest instance of this would be the degree head *zo* `so', which is always stressed. Apart from emphasis, the nature of the link between first and second associate is also important. In coordination and comparatives, the noun phrase in the second associate borrows, or shares, as it were, the syntactic function of one of the noun phrases in the matrix clause. This requires an additional step in processing, a step that result clause constructions, in which information is merely being added on, do not require.

ANALYSIS

As for the analysis of result clause constructions, it is difficult to account for the possibility of embedding the antecedent in structural terms. That is, it seems to be impossible to define a set of positions and constituents in which a degree phrase can or can not occur. Rather, it seems to be the case that an analysis should provide a structure in which several possibilities are allowed for.

This is the position I will take: an analysis of result clause constructions should provide a structural configuration that allows for a free distribution of the

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19 In section 5.7 examples will be considered in which an antecedent degree phrase is embedded in a subclause.

antecedent degree phrase. In section 5.1.2 I discussed how a result clause is licensed by a degree phrase. I proposed that the result clause is licensed by movement of the degree phrase to adjoin to the specifier of the conjunction phrase. This yields a configuration in which specifier head agreement ensures that the degree head and the conjoining head are matched. With the head of the conjunction as intermediary, the degree phrase can also be matched with the result clause. As was noted there, this entails that the only restriction on the degree phrase will be that it occurs in a position from which it is able to move up to adjoin to the specifier. In section 5.7 below we will see that, presumably for this reason, the degree phrase can be embedded in (and move out of) a complement clause, but not in a relative clause.

5.6 Split antecedents

In chapter 4, the fact that result clauses can have two antecedent degree phrases was one of the main reasons not to assume that the subclause originates inside the degree phrase (cf. section 4.3.5, Andrews 1975). In this section we will see more examples of split antecedents in result clause constructions. Relative clauses also allow split antecedents, but with coordination and comparatives there are a number of other issues that need to be taken into account.

First consider a result clause example:

(46) a **Zo**veel mensen hebben **zo**veel boeken geleend **dat** de bibliotheken bijna leeg zijn
so-many people have so-many books borrowed that the libraries almost empty are
`So many people borrowed so many books that the libraries are almost empty'

b **Zo**veel mensen in deze buurt hebben **zo**veel deuren **zo** fel rood geschilderd **dat** de bloemen erbij in het niet vallen
so-many people in this area have so-many doors so bright red painted that the flowers thereby in the nothing fall
`So many people in this neighbourhood painted so many doors in such a bright red that the flowers seem to be invisible'

(47) So many people liked so many pictures at the gallery that the exhibition was held over for two weeks

(Guéron & May 1984, p.2, ex.(7a))

It seems that, in cases like these, the result clause presents the effect that is produced by a combination of several factors. In (46b) it is the amount of people plus the amount of doors plus the brightness of red that, together, results in the situation that flowers are hardly noticable any more. These factors (number of people and doors, brightness of the colour used) are brought to attention and indicated syntactically and prosodically by the degree head *zo* `so'.

Note that in this clause-internal case of a split antecedent, the antecedents are distributed over constituents with different syntactic functions, viz. subject, object and secondary predicate.

This is also possible in comparatives (under certain conditions), but not in the other two constructions at issue in this section. Guéron & May (1984, p.3, ex.(7b)) give the following example of a relative clause with two antecedents within one clause (cf. section 4.3.4 of the previous chapter):

(48) * Every man saw some woman last year who is similar

As we will see shortly, in relative clause and coordination constructions, the entities within one clause that the second part refers back to must be coordinated into a single phrase.

Result clauses also allow coordinated antecedents:

(49) Op het festival waren [**zo**veel ouders en **zo** weinig kinderen] **dat** er meer ouders dan kinderen waren
on the festival were so-many parents and so few children that there more parents than children were
`There were so many parents and so few children at the festival that there were more parents than children'

The following example shows that the occurrences of *zo* `so' need not be restricted to a single clause; the antecedents may occur in two separate (coordinated) clauses:[20]

[20] See also the discussion of the impossibility of linking across a clause boundary in section 5.7.

(50) [Zij is **zo** klein] en [hij is **zo** groot] **dat** ze samen op Mini en Maxi lijken
she is so small and he is so big that they together on Mini and Maxi resemble
`She is so small and he is so big that together they resemble Mini and Maxi'

Relative clause constructions can have split antecedents, both inside a single clause and across clauses. The relevant examples are given in (51):[21]

(51) a Janna heeft **een man en een vrouw** gezien **die erg op elkaar leken**
Janna has a man and a woman seen who very on eachother seem
`Janna saw a man and a woman who looked very much like each other'

b **A man** entered the room and **a woman** went out **who were quite similar**
(Perlmutter & Ross 1970, Kaan 1992)

c **Een man** kwam de kamer binnen en **een vrouw** ging naar buiten **die erg op elkaar leken**
a man came the room inside and a women went to outside that very on eachother seem
`A man entered the room and a woman went out who looked like each other'

With respect to comparatives, it is possible to have two degree phrases in different (subject or object) positions in one clause (cf. Hendriks 1994 for discussion):

(52) *More land* produces *more corn than ever before*

However, this is only a case of split antecedents if the second conjunct (*than ever before* above) provides a general comparison and does not refer back to any of the comparative degree phrases in subject and object position specifically. That is to say, if the second conjunct were *than rye*, as in (53) below, it cannot refer back to both subject and object: *than rye* does not have a split antecedent in the following example:

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21 Since the relative clause is not compatible with either antecedent by itself, examples like these cannot be analysed as involving Right Node Raising (cf. chapter 4, section 4.3.5 on Andrews 1975).

(53) *More land* produces *more corn* nowadays *than rye* (than before)

In example (53) *than rye* can only be linked to *more corn*, and the interpretation is that the amount of land that produces more corn than rye is increasing.

The restriction that comparison should be general (and not specifically aimed at both the subject and object) to make split antecedents feasible originates in the following. To interpret the sentence fully, one needs to reconstruct the syntactic environment of the antecedent (in (53) the object) in order to assign a syntactic function to the second conjunct.[22] That is to say, to be able to infer that *rye* should be interpreted as an object, as the entity that is produced besides corn, it should somehow identify with the syntactic function of *corn*. Since this is not needed in the general example with *than ever before* in (52), this one does not run into interpretational problems.

Besides these clause-internal split antecedents it is possible to coordinate two antecedents into a single phrase that performs the same syntactic function as the compared element in the second conjunct:

(54) [**Meer mannen en minder kinderen**] waren er op het festival **dan vrouwen**
more men and less children were there on the festival than women

Example (55) shows that it is possible for a comparative *than* phrase to have antecedents that are distributed over two coordinated clauses, although judgments on this example differ:

(55) ? **Meer mannen** waren op het festival en **meer kinderen** bleven weg **dan vrouwen** (op het festival waren of weg bleven)
more men were on the festival and more children stayed away than women (were on the festival or stayed away)

With respect to coordination, it is obvious that clause-internal coordination of first associates is possible.

(56) a Janna heeft **aardbeien en kersen** gekocht (,) **en perziken**
Janna has strawberries and cherries bought and peaches

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22 The same requirement makes clause-internal split antecedents in coordination uninterpretable.

`Janna bought strawberries, cherries and peaches'

b **Janna en Piet** kochten aardbeien, **en Petra**
Janna and Piet bought strawberries and Petra
`Janna and Piet bought strawberries, and Petra'

In these examples, the intonation pattern of the utterance is very important in providing the intended meaning.

It seems more difficult to provide an appropriate example of split antecedents across clauses with respect to coordination. These are only possible when the contents of the clauses in which the two antecedents appear are equal:

(57) a **Jan** ging weg **en Piet** (ging weg) **en Marie** (ging weg)
Jan went away and Piet went away and Marie went away

b # **Jan** ging weg **en Piet** arriveerde **en Marie** (..?..)
Jan went away and Piet arrived and Marie

This does not come as a surprise when one realizes that the semantic content of the absent clause that *Marie* is subject of has to be reconstructed from the clauses of the antecedents. At the same time, the reconstruction requirement makes examples like (57) look weird.

Similarly, it is impossible to construct an example in which a second conjunct would have both subject and object as antecedent:

(58) # Janna kuste Marie(,) en Peter
Janna kissed Marie and Peter
does not mean:
Janna kissed Marie & Peter (kissed Marie) & (Janna kissed) Peter

Reconstruction of the syntactic environment of the antecedent, then, prevents coordinated (and compared) noun phrases from having clause-internal split antecedents.

5.6.1 Summary

In sum, all four constructions allow split antecedents across two clauses. The nature of the link between the antecedent on the one hand and result or relative

clauses or second conjunct on the other hand determines to what extent such split antecedent cases are feasible.

In coordination, for instance, both antecedents should have the same syntactic function in their respective clauses, which in addition need to contain the same information for the whole sentence to be interpretable.

Result clause constructions and some comparatives are the only ones in which the syntactic function of the constituent containing the degree head (*zo* `so' or *-er/more*) does not matter; only they allow clause-internal split antecedents in constituents with different syntactic functions.

ANALYSIS

The possibility of split antecedents is one that proved to be hard to capture in any previous analysis.[23] It seems that an analysis should allow for it, rather than account for it. The conjunction phrase analysis presented here indeed allows for split antecedents.

In section 5.1.2 I discussed how the result clause constructions is licensed; the licensing relation does not preclude split antecedents.

5.7 No (non-complement) CP-boundary in between

In section 5.5 above we saw that the antecedent of result clauses may be very deeply embedded. Kayne (1994, p.127) observed that *so* can not be embedded in a relative clause in English:

(59) * Plots [that **so** many people know about] have been hatched [**that** the government has lost all credibility]

In general, the antecedent of a result clause may not be contained in a subclause of a matrix clause, if the result clause occurs in the final position of the matrix clause. In the case of (59), the antecedent *so* is contained in a relative clause, whereas the result clause occurs at the end of the matrix clause.

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[23] See section 4.3.4 of the previous chapter for Guéron & May's (1984) account of split antecedents in result clause constructions.

If the analysis proposed here is correct, the result clause in (59) is conjoined with (at least) the matrix AgrSP (because the degree phrase is part of the subject constituent, which I assume to be in [spec,AgrSP]):

(60) $[_{conjp}\ [_{agrsp}$ plots $[_{cp}$ ..**so**..]] [: $[_{cp}$ **that**....]]]

Apparently, the antecedent degree phrase may not be contained in a CP within the specifier of the conjunction phrase).

Now if the result clause were conjoined with (the AgrSP of) the relative clause containing the antecedent, it would occur right after the relative clause. In that case, the sentence ought to be grammatical, because there is no longer any CP boundary in the first conjunct that separates *so* and the result clause. This prediction is borne out by the following examples:

(61) The secret plans [that **so** many people know about **that** the government has lost all credibility] have (finally) been hatched

(62) De criminelen, [die bij **zo**veel mensen bekend waren **dat** de politie gezichtsverlies leed], zijn eindelijk gearresteerd
the criminals who with so-many people known were that the police face-loss suffered are finally arrested
`The criminals, who were known to so many people that the police lost face, are finally arrested'

Similarly, when the antecedent is part of a subject clause, the result clause must be conjoined with (and hence appear right after) the subject clause, and cannot occur at the end of the matrix clause:

(63) a [[Dat de haven **zo** mooi is **dat** Jan 'm wil fotograferen] is duidelijk
that the harbour so beautiful is that Jan it wants photograph is clear
b * [[Dat de haven **zo** mooi is] is duidelijk] [**dat** Jan 'm wil fotograferen]

The same restriction applies to noun phrase coordination, comparatives and a noun phrase plus relative clause:

(64) a [Dat zij **Jan** bemint **en Piet**] is duidelijk
that she Jan loves and Piet is clear
`That she loves Jan and Piet is clear'
b * [Dat zij **Jan** bemint] is duidelijk [**en Piet**]

(65) a [Dat er **meer mannen** op het festival zijn **dan vrouwen**] is duidelijk
that there more men on the festival are than women is clear
`That there are more men at the festival than women is clear'
b * [Dat er **meer mannen** op het festival zijn] is duidelijk [**dan vrouwen**]

(66) a [Dat hij **de vrouw** kent **die alles weet**] is duidelijk
that he the woman knows that everything knows is clear
`That he knows the woman who knows everything is clear'
b * [Dat hij **de vrouw** kent] is duidelijk [**die alles weet**]

(67) a [Dat de haven **zo** mooi is **dat** Jan 'm wil fotograferen] is duidelijk
that the harbour so beautiful is that Jan it wants photograph is clear
b * [Dat de haven **zo** mooi is] is duidelijk [**dat** Jan 'm wil fotograferen]

In section 5.6 it was observed that in split antecedent constructions the antecedents need not occur in the same clause (cf. (68) below). At first sight, this seems to be a violation of the observation that no CP boundary may occur between the result clause and its antecedent(s). The next example (68a), shows that the split antecedent construction can involve complement clauses. In these examples, a CP dominating the antecedent does not seem to be problematic, contrary to what we have just seen with relative clauses and subject clauses. (68a) seems to me to be grammatical, although the various complementizers (*dat*) seem somewhat superfluous. The example in (68b), with two coordinated AgrSPs embedded in one CP sounds more natural to me:

(68) a Hij zei [dat zij **zo** klein is] en [dat hij **zo** groot is] **dat** ze samen op Mini en Maxi lijken
he said that she so small is and that he so big is that they together on Mini and Maxi resemble

b Hij zei [dat [zij **zo** klein (is) en hij **zo** groot is]] **dat** ze samen op Mini en Maxi lijken
he said that she so small is and he so big is that they together on Mini and Maxi resemble

The examples (68c,d) show that the result clause in (68a) is construed directly with the coordinated complement clauses, and that it is actually part of the complement of *zei* `said' itself:

(68) c [[Dat zij **zo** klein is] en [dat hij **zo** groot is] **dat** ze samen op Mini en Maxi lijken] zei Jan
that she so small is and that he so big is that they together on Mini and Maxi resemble said Jan

d * [[Dat zij **zo** klein is] en [dat hij **zo** groot is]] zei Jan [**dat** ze samen op Mini en Maxi lijken]
that she so small is and that he so big is said Jan that they together on Mini and Maxi resemble

If we accept the grammaticality of (68a,c), the examples show that a result clause can be separated from its antecedent *zo* `so' by (at most) one complement CP boundary.[24]

From a different point of view it seems that the degree head *so* is able to reach out of a complement clause and take scope over the matrix clause. This has also been attested by various authors in the past. Andrews (1975, p.165) cites the following examples from Williams (1974):

(69) a Bill's teachers said he was **so** smart he could solve any problem
b Bill's teachers said he was **so** smart **that** people doubted their recommendations

In the (69b) example, the result clause is construed with the matrix clause, whereas in (69a) it is construed with just the complement clause of *said*. Williams (cited in Andrews 1975, p.166) provides the following test to distinguish between the two structures:

(70) a * Bill is said to be **so** smart [by his teachers] **that** he can solve any problem
b Bill was said to be **so** smart [by his teachers] **that** people doubted their recommendations

In (70a) the agent *by*-phrase intervenes between the result clause and the complement clause containing its antecedent: the sentence is ungrammatical. In

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[24] With respect to antecedents in relative and subject clauses (or non-complement clauses in general), the result clause construction obeys the following constraint: no CP may dominate the antecedent *zo* `so' while not dominating the result clause.

Interestingly, the same transparency of complement clauses is observed with respect to tense. The tense used in complement clauses depends on the matrix clause tense, whereas the tense used in a relative clause is independent of the matrix clause tense (cf. Stowell 1997).

(70b) the agent *by*-phrase is part of the matrix clause with which the result clause is construed and the sentence is grammatical.

Rouveret (1978, p.159 ff., cf. section 4.3.6) extensively discusses examples like the following (my glosses, PR):

(71) a Marie dit qu'elle a des amis si influents qu'elle va obtenir le poste
Marie says that-she has of-the friends so influential that-she will get the job
`Marie says that she has such influential friends that she is going to get the job'
b = Marie says that her having friends influential to a degree x will result in her getting the job
c or: Marie's saying that she has friends influential to a degree x will result in her getting the job

Example (71a) is ambiguous with respect to the clause with which the result clause is construed. In (71b), the result clause is construed (and in the analysis defended here, conjoined) with the complement clause of *dire* `to say'. In (71c), we see an interpretation in which the result clause is construed with the matrix clause: it is Marie's claim that she has such influential friends that gets her the job.

Let us now look at the other constructions under consideration here with respect to linking across (complement) clauses. The following examples show that the sentence-internal and sentence-final parts in coordination, comparatives and relative clause constructions as well can be separated by a complement CP. Again, they cannot be separated from each other by the matrix CP:[25]

(72) a Hij zei [dat **Jan** weg ging] en [dat **Piet** weg ging] **en Marie**
he said that Jan away went and that Piet away went and Marie
`He said that Jan left and that Piet left, and Marie'
b * [Dat **Jan** weg ging en dat **Piet** weg ging] heeft hij gezegd en Marie
that Jan away went and that Piet away went has he said and Marie

(73) a Hij zei [dat **een man** de kamer binnen kwam] en [dat **een vrouw** naar buiten ging] **die erg op elkaar leken**
he said that a man the room inside came and that a woman to outside went that very on eachother seemed

[25] The (b) examples are grammatical if the matrix clause part in the examples (*heeft hij gezegd* `has he said') is treated as an interjection, and pronounced with the appropriate intonation. This is not what is at stake here.

`He said that a man entered the room and that a woman went out who looked like eachother'

b * [Dat **een man** de kamer binnen kwam en dat **een vrouw** naar buiten ging] heeft hij gezegd **die erg op elkaar leken**
that a man the room inside came and that a woman to outside went has he said that very on eachother seemed

(74) a Hij zei [dat er **meer mannen** op het festival waren] en [dat er **meer kinderen** wegbleven] **dan vrouwen**
he said that there more men on the festival were and that there more children away-stayed than women

b * [Dat er **meer mannen** op het festival waren en dat er **meer kinderen** weg bleven] heeft hij gezegd **dan vrouwen**
that there more men on the festival were and that there more children away stayed has he said than women

Andrews (1975, p.165) cites comparative examples by Williams (1974), in which the comparative degree head is contained in a complement clause of the main verb, while the result clause is construed with the matrix clause as a whole:

(75) a Bill's teachers said he was smart**er than** anybody else was
b Bill's teachers said he was smart**er than** anybody else did

In (74b), the result clause is construed with the matrix clause, whereas in (74a) it is construed with just the complement clause of *said*. Williams (cited in Andrews 1975, p.166) provides the following test to distinguish between the two structures (cf. above for result clause constructions):

(76) a * Bill is said to know more [by his teachers] than anybody else does
b Bill was said to be smarter [by his teachers] than he was by anybody else

Just like we saw in the result clause examples on p.&&& above, in (76a) the agent *by*-phrase intervenes between the comparative clause and the clause it is construed with. In (76b) however, the agent *by*-phrase is part of the matrix clause with which the comparative clause is construed, and the sentence is fine.

In sum, result clauses, relative clauses and second conjuncts in coordination and comparatives may be separated from their antecedent by a complement-CP, but not by any other subclause (be it subject clause or relative clause).

ANALYSIS

There are several other phenomena in which clause boundaries seem to be real barriers. Apparently, the conjunction phrase analysis of e.g. coordination and result clauses is no exception to this. For instance, in work on tense and sequence of tense, Stowell (1997) also showed that complement clauses behave differently from relative clauses. In complement clauses, the tense depends on the matrix clause tense. In relative clauses, the tense is independent of that of the matrix clause. Thus, complement clause seem to be more transparent than other subclauses.

Given the licensing proposal in section 5.1.2, I assume that the degree projection of *so* moves up to adjoin to the constituent in the specifier position of the conjunction phrase. It thereby marks the specifier constituent and creates a specifier-head relation in which the match between the degree head, the head of the conjunction and the dependent clause can be checked. To allow for the movement of the degree phrase, the degree phrase must occur in a position from which it is able to make that movement. Since movement out of a complement clause is generally allowed, whereas movement out of a subject clause or relative clause is not, it makes sense that a result clause can be associated with a degree phrase across a complement clause boundary, but not across a non-complement clause boundary.

An account of why complement clause do not pose a barrier between a result clause and its antecedent, or between tenses, would probably refer to L-relatedness. Being complements to the verb that selects them, complement clauses occur in L-related positions, whereas subject clauses, for instance, presumably are not (cf. Chomsky 1995, p.64 on L-related positions). I will not go into this here but state the requirement that no non-complement CP may intervene between a result clause and its antecedent(s).

5.8 Nested dependencies

In sentences with more than one result clause, relative clause, coordination or comparative construction, the dependencies are nested. For instance, a prepositional phrase associated with a direct object noun phrase will precede a prepositional phrase that is associated with a subject noun phrase when both occur sentence-finally (cf. below).

This nesting phenomenon also appears when there are two result clauses in a sentence; in (77) the result clause associated with an antecedent *zo* `so' in the subject noun phrase follows the result clause associated with the antecedent *zo* `so' in the object noun phrase:

(77) a **Zo$_1$**veel mensen hebben **zo$_2$**veel geld [**dat$_2$** ze niet weten
people have so-much money that they not know
wat ze ermee moeten doen] [**dat$_1$** liefdadigheidsinstellingen
what they there-with should do that charity-institutions
failliet zouden gaan aan de postzegels die nodig zijn om
bankrupt would go on the stamps that needed are to
hen allemaal te bereiken]
them all to reach
`So many people have so much money that they do not know what to do with it, that charity institutions would go bankrupt on the stamps needed to reach them all'

b * **Zo$_1$**veel mensen hebben **zo$_2$**veel geld [**dat$_1$** liefdadigheids-instellingen failliet zouden gaan aan de postzegels die nodig zijn om hen allemaal te bereiken] [**dat$_2$** ze niet weten wat ze ermee moeten doen]

Now consider the other constructions. For example, if both the subject and the object in a clause are coordinated or compared, the order of the coordinated or extraposed elements is the reverse of the subject-object order:[26]

(78) a **Marie en Jan** hebben *Truus en Piet* bemind
Marie and Jan have Truus and Piet loved
`Marie and Jan loved Truus and Piet'

b **Marie** heeft *Truus* bemind *en Piet*, en **Jan** (ook)
Marie has Truus loved and Piet and Jan (too)
`Marie loved Truus and Piet, and Jan did so too'

c * **Marie** heeft *Truus* bemind **en Jan** (ook), *en Piet*

(79) a **Meer mannen dan vrouwen** hebben *meer kranten dan boeken* gelezen
more men than women have more newspapers than books read
`More men than women read more newspapers than books'

[26] Note that the (c) sentences are ungrammatical on the interpretation given under (a).

b **Meer mannen** hebben *meer kranten* gelezen *dan boeken* (,) **dan vrouwen**
more men have more newspapers read than books than women
c * **Meer mannen** hebben *meer kranten* gelezen **dan vrouwen** *dan boeken*

(80) a **Die man [die we gisteren zagen]** heeft *dat boek [dat jij wilde hebben]* gekocht
that man that we yesterday saw has that book that you wanted have bought
`That man we saw yesterday bought that book you wanted'

b ?* **Die man** heeft *dat boek* gekocht *[dat jij wilde hebben]* **[die we gisteren zagen]**
a man has a book bought about skating with red hair
c * **Die man** heeft *dat boek* gekocht **[die we gisteren zagen]** *[dat jij wilde hebben]*

One can also find examples in which a comparative construction is nested in a result clause construction (cf. Guéron & May 1984, p.29, ex.(68)):

(81) a **So** many people ate *more* hush puppies at the county fair *than* we expected **that** we ran out of them early
b * **So** many people ate *more* hush puppies at the county fair **that** we ran out of them early *than we expected*

Guéron & May (1984) assume that result clauses and extraposed comparative clauses are S'-adjuncts (to the right). They leave the ordering restriction an open issue. The next part of this section provides an explanation for the ordering restriction in (81).

ANALYSIS

The nesting requirement will be accounted for by the conjunction phrase analysis as follows. Recall the observation in section 5.4 that antecedent degree phrases in subject positions give rise to different structures than do degree phrases in object position:

(82) a **Zo**veel mensen hebben *Pride and Prejudice* gekocht **dat** het binnen een week uitverkocht was
so-many people have Pride and Prejudice bought that it within a week out-sold was

`So many people bought *P&P* that it was sold out within a week'

b [$_{conjp}$ [$_{agrsp}$ zoveel mensen hebben P&P gekocht] [: [dat...]]]

(83) a Vestdijk heeft **zo**veel boeken geschreven **dat** ze niet op deze plank zouden passen
Vestdijk has so-many books written that they not on this shelf would fit
`Vestdijk wrote so many books that they would not fit on this shelf'

b Vestdijk heeft [$_{conjp}$ [$_{agrop}$ zoveel boeken geschreven] [: [dat...]]]

For the example in (77), repeated below, I propose the structure in (84b):

(84) a **Zo$_1$**veel mensen hebben **zo$_2$**veel geld [**dat$_2$** ze niet weten
so-many people have so-much money that they not know
wat ze ermee moeten doen] [**dat$_1$** liefdadigheidsinstellingen
what they there-with should do that charity-institutions
failliet zouden gaan aan de postzegels die nodig zijn om
bankrupt would go on the stamps that needed are to
hen allemaal te bereiken]
them all to reach
`So many people have so much money that they do not know what to do with it, that charity institutions would go bankrupt on the stamps needed to reach them all'

b [$_{conjp1}$ [$_{agrsp}$ **zo**$_1$ [$_{conjp2}$ [$_{agrop}$ **zo**$_2$] [:[**dat**$_2$...]]]]$_{agrsp}$ [: [**dat**$_1$...]]]

Since the conjunction phrase of the object-related result clause is embedded in the first conjunct of the subject-related conjunction phrase, it follows straightforwardly that the object-related result clause precedes the subject-related result clause. The structure thus reflects the respective scopes of the degree elements.

Looking back at earlier extraposition analyses (cf. chapter 4), they usually involve right-adjunction to the matrix clause at a certain (structural) level. Analyses like these cannot immediately predict that sentence-final subject-related items will follow other sentence-"final" items related to phrases in the matrix clause that are structurally lower than the subject. Guéron & May (1984), for example, assume that both result clauses and comparative clauses are S'-adjuncts. They give the following example of an ordering restriction that they were not able to account for (ibid., p.29, ex.(68)):

(85) a **So** many people ate *more* hush puppies at the county fair *than* we expected **that** we ran out of them early

b * **So** many people ate *more* hush puppies at the county fair **that** we ran out of them early *than we expected*

The analysis of nested dependencies just presented neatly accounts for the examples in (85). The comparative *more hush puppies* gives rise to conjunction at a lower level than the result clause construction with *so many people* in subject position. On the assumption that (at least at LF) the object *more hush puppies* occupies [spec,AgrOP], the comparative clause will be conjoined with AgrOP. The result clause will be conjoined with (at least) AgrSP, which includes the AgrOP-conjunction, comparative clause and all:

(86) $[_{conjp1}$

$[_{agrsp}$ so many people ate
$[_{conjp2}$ $[_{agrop}$ more hush puppies...] $[:_2$ [than....]]]

$]_{agrsp}$ $[:_1$ [that....]]]

It should be noted that the embedding of a conjunction with AgrOP in a conjunction with AgrSP is a clear case of one construction having scope over (and containing) another. However, there are other cases in which this type of scope is not so easily determined. These concern examples like the following, in which a complex degree phrase includes both *zo* `so' and a comparative:

(87) a Janna is in haar jeugd [**zo**veel lang*er*] geweest *dan* Marie **dat** ik niet kan geloven dat Marie nu de langste is
Janna is in her youth so-much taller been than Marie that I not can believe that Marie now the tallest is
`Janna was so much taller than Marie in her youth that I cannot believe that now Marie is tallest'

b [**Zo**veel *meer* mensen] kwamen naar het feest *dan* ze uitgenodigd had **dat** de wijn al snel op was
so-many more people came to the party than she invited had that the wine already quickly up was
`So many more people came to the party than she invited that they quickly ran out of wine'

(88) a [**As** many *more* people] *than* I invited came to the party **as** you predicted
b * **As** many *more* people **as** you predicted came to the party *than* I invited
c **As** many *more* people came to the party *than* I invited **as** you predicted
d * **As** many *more* people came to the party **as** I invited *than* you predicted
(Andrews, 1975, p.164, ex.(93))

In chapter 3 I concluded that degree phrases like *zoveel langer* `so much taller' involve modification of *langer* by *zoveel*: *zoveel* is adjoined to *langer*:

(89) $[_{degp1}\ [_{degp2}$ zoveel] $[_{degp1}$ langer]]

In this case, it is not clear how the degree head *zo* `so' in itself would c-command the comparative degree head. Instead, it seems that the whole phrase *zoveel* `so-much' (or *as many* in (88) above) counts for scope assignment. Since degree $phrase_2$ *zoveel* is adjoined to degree $phrase_1$ in (89) above, and hence c-commands degree $phrase_1$ according to Kayne (1994), degree $phrase_2$ has wider scope than the modified comparative degree phrase.[27] By consequence, the comparative construction is embedded in the result clause construction.[28]

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[27] Consider the scopal relations in examples like Bresnan (1973, p.339, cited in Andrews 1975, p.157) as well:
(i) a Mary doesn't have as many too many too many .... marbles as Jane
b Cinday has **more** nearly *as* many too many marbles *as* Julie **than** Jane
A specifier c-commands the constituent it is a specifier of, and a specifier of a specifier of XP also c-commands XP.

[28] Unfortunately, this account does not apply to the following example noted earlier:
(36) a Everybody is **so** strange [whom I like] [**that** I can't go out in public with them]
b * Everybody is **so** strange [**that** I can't go out in public with them] [whom I like]
(5) a ? Iedereen is zo vreemd [die ik ken] [dat ik niet met ze in het openbaar wil verschijnen]
everyone is so strange that I know that I not with them in the public want appear
`Everyone is so strange [whom I know] [that I do not want to appear in public with them]'
b * Iedereen is zo vreemd [dat ik niet met ze in het openbaar wil verschijnen] [die ik ken]
The Dutch (a) example is not very good, but it is clearly better than the ungrammatical (b).
In these examples we have crossing dependencies that I do not have an account for yet.

5.9 No split in the middle field

When the four constructions at issue occur in the middle field (which is only marginally possible with result clauses), it is ungrammatical to topicalize (the (constituent containing) the antecedent noun phrase or degree phrase.

As discussed in section 5.3, result clauses usually appear in clause-final position. The examples below show that they do not readily appear in the middle field of a clause. It might very well be that the restriction on occurrence in the middle field is not entirely syntactic in nature (cf. Truckenbrodt 1994).

Truckenbrodt developes an intonation based account of extraposition. Since subclauses have their own intonational domain, they do not easily fit into that of the matrix clause. In the same vein, relative clauses that are rather long or intricate preferrably occur at the end of the matrix clause.

In any case, result clauses can occur in the middle field of a sentence, though not readily. This section shows that, in contrast, it is completely ungrammatical to strand the result clause in the middle field when topicalizing the antecedent. Again, this also holds for a noun phrase with an associated relative clause and for coordination and comparatives:[29]

(90) a Zij heeft **een man en een vrouw** gezien
she has a man and a woman seen
`She saw a man and a woman'
b * **Een man** heeft zij **en een vrouw** gezien

(91) a Zij heeft **meer mannen dan vrouwen** gezien
she has more men than women seen
`She saw more men than women'
b * **Meer mannen** heeft zij **dan vrouwen** gezien

(92) a Zij heeft **de vrouw die alles wist** gezien
she has the woman that everything knew seen
b * **De vrouw** heeft zij **die alles wist** gezien

[29] This is one of a number of arguments against a stranding analysis of relative clause extraposition (e.g. Kayne 1994): if it is possible to strand a relative clause in sentence-final position, why can it not be stranded in the middle-field as well.

(93) a ?* Ze had al lang [**zoveel boeken dat ze niet op één plank passen**] gelezen
she had already long so-many books that they not on one shelf fit read
`She read so many books that they don't fit on one shelf by far'
b * **Zoveel boeken** had ze al lang **dat ze niet op één plank passen** gelezen

Even if (93a) is an intonationally difficult sentence, (93b) is absolutely ungrammatical.

ANALYSIS

The observation that one cannot extract one coordinate out of coordination structures dates back to the Coordinate Structure Constraint in Ross (1967). In the present conjunction phrase analysis of coordination, result clause and other constructions, I relate the impossibility of extracting the first conjunct to the licensing domain of the construction.

In section 5.1.2 I proposed that a conjunction phrase is licensed by movement of the degree phrase to the specifier in the conjunction phrase. By that movement the degree phrase creates the option to check whether the degree head, the conjoining head and the result clause are matched.

However, if the degree phrase occurs in a topicalized position above the conjunction phrase, it can no longer adjoin to the specifier of the conjunction phrase to license the construction. An alternative structure, in which the topicalized constituent is indeed part of the specifier of conjunction phrase is not feasible:

(94) * [**Zoveel boeken** had ze [: [**dat ze niet op één plank passen**]]] gelezen
so-many books had she that they not on one shelf fit read
`She read so many books that they don't fit on one shelf by far'

In (94), the specifier of the conjunction phrase appears to consist of the string *zoveel boeken had ze* (so-many books had she). However, this string does not form a constituent, so (94) is ungrammatical.

Hence, the contrast between the examples in (93a,b) originates in the following. Whereas (93a) is intonationally difficult, it still involves a conjunction phrase that can be licensed. In contrast, the conjunction phrase in (93b) cannot be properly licensed and the example is completely ungrammatical.

Note that the ungrammatical examples in (90)-(93) are fine if the second conjunct occurs sentence-finally:

(95) a Zij heeft **een man** gezien **en een vrouw**
she has a man seen and a woman
`She saw a man and a woman'
b **Een man** heeft zij gezien **en een vrouw**

(96) a Zij heeft **meer mannen** gezien **dan vrouwen**
she has more men seen than women
`She saw more men than women'
b **Meer mannen** heeft zij gezien **dan vrouwen**

(97) a Zij heeft **de vrouw** gezien **die alles wist gezien**
she has the woman seen that everything knew
b **De vrouw** heeft zij gezien **die alles wist**

(98) a Ze had [**zoveel boeken**] gelezen [**dat ze niet op één plank passen**]
she had so-many books read that they not on one shelf fit
`She read so many books that they don't fit on one shelf'
b **Zoveel boeken** had ze gelezen **dat ze niet op één plank passen**

In these examples, the specifier of the conjunction phrase can contain the topicalized constituent, contrary to the ones in (90)-(93):

(99) [[**Zoveel boeken** had ze gelezen] [: [**dat ze niet op één plank passen**]]]
so-many books had she that they not on one shelf fit read
`She read so many books that they don't fit on one shelf by far'

In (99) the result clause is conjoined with the matrix clause, including the topicalized noun phrase *zoveel boeken* `so many books'. As such, the object noun phrase is still able to license the conjunction phrase and the sentence is grammatical.

The following section presents examples in which the second conjunct is topicalized. As we will see, these examples are ungrammatical as well, due to the same problem: once one or the other conjunct in a conjunction phrase is moved out, it can no longer be properly licensed.

5.10 No topicalization of the second conjunct without the first

In the preceding section we saw that it is ungrammatical to topicalize a first conjunct from within a conjunction phrase in the middle field of a clause.

In this section we will see that it is also impossible to topicalize the second conjunct from sentence-final position if the antecedent is not topicalized as well.[30]

This contrasts with topicalization cases in which the object or indirect object are topicalized together with the verb, as shown in (100):

(100) a Zij heeft Jan gisteren gezien
she has Jan yesterday seen
b [Jan gisteren gezien] heeft zij niet
Jan yesterday seen has she not
`She didn't see Jan yesterday'

c Marie zal Jan een boek geven
Marie will Jan a book give
d [Jan een boek geven] zal Marie niet
Jan a book give will Marie not
`Marie will not give Jan a book'

The following example shows that a result clause cannot be topicalized together with the verb, unless the antecedent *zo veel* `so much' is also topicalized (or in the left-dislocated part):

(101) a Ze hebben **zo**veel gegeten **dat** ze er misselijk van waren
they have so-much eaten that they there sick of were
`They ate so much that they were sick (of it)'

b * [Gegeten **dat** ze er misselijk van waren] hebben ze **zo**veel
c [**Zo**veel gegeten **dat** ze er misselijk van waren] hebben ze

---

[30] Cf. Kaan (1992, p.39-40), who notes that sentence-final prepositional phrases that are linked with a noun phrase within the clause cannot be topicalized together with the verb (cf. (c)):

(i) a Zij heeft de man begroet [met de drie armen]
she has the man not greeted with the three arms
`She greeted the man with the three arms'
b * [De man begroet met de drie armen] heeft zij niet
c * [Begroet met de drie armen] heeft zij de man niet

(102) a Die jongen is **zo** mager **dat** hij wel achter een rietje kan schuilen
that boy is so skinny that he PRT behind a reed can shelter
`That boy is so skinny that he could hide behind a reed'

b * [**dat** hij wel achter een rietje kan schuilen] is die jongen **zo** mager
c [**zo** mager **dat** hij wel achter een rietje kan schuilen] is die jongen

This is also attested for coordination and comparison of noun phrases and noun phrases with a relative clause:

(103) a Zij heeft **Jan** gezien **en Piet**
she has Jan seen and Piet
a' * [Gezien **en Piet**] heeft zij **Jan**
seen and Piet has she Jan

b Zij heeft **een man** gezien **die uit India komt**
she has a man seen that from India comes
b' * [Gezien **die uit India komt**] heeft zij **een man**
seen that from India comes has she a man

c Zij heeft **meer documentaires** gezien **dan films**
she has more documentaries seen than movies
c' * [Gezien **dan films**] heeft zij **meer documentaires**
seen than movies has she more documentaries

d Ze hebben **zo**veel kaas gegeten **dat** ze er misselijk van waren
they have so-much cheese eaten that they there sick of were
d' * [Gegeten **dat** ze er misselijk van waren] hebben ze **zo**veel kaas
eaten that they there sick of were have they so-much cheese

Only when the first associate is topicalized as well can the second associate be part of the sentence-initial part:

(104) a [**Jan** gezien **en Piet**] heeft zij
Jan seen and Piet has she
b [**Een man** gezien **die uit India komt**] heeft zij
a man seen that from India comes has she
c [**Meer documentaires** gezien **dan films**] heeft zij
more documentaries seen than movies has she
d [**Zoveel kaas** gegeten **dat ze er misselijk van waren**] hebben ze
so-much cheese eaten that they there sick of were have they

ANALYSIS

The structural configuration of a conjunction phrase straightforwardly accounts for the possible and impossible topicalizations. Consider (101), repeated as (105):

(105) a Ze hebben **zo**veel gegeten **dat** ze er misselijk van waren
they have so-much eaten that they there sick of were
`They ate so much that they were sick (of it)'

b * [Gegeten **dat** ze er misselijk van waren] hebben ze **zo**veel
c [**Zo**veel gegeten **dat** ze er misselijk van waren] hebben ze

In section 5.4 I assumed that when the antecedent degree phrase is part of a direct object (the constituent in [spec,AgrOP]), the result clause will be conjoined with (at least) AgrOP. That is, the sentence has the following structure:

(106) Ze hebben [$_{conjp}$ [$_{agrop}$ **zo**veel gegeten] [: [**dat** ze er misselijk van waren]]]

Looking at the ungrammatical (105b) example, it is clear from the structure in (106) that the topicalized part is not a constituent:

(107) * [$_{?p}$ Gegeten **dat** ze er misselijk van waren]$_i$ hebben ze
[$_{conjp}$ [$_{agrop}$ **zo**veel t_i

The grammatical examples, however, are straightforwardly analysed as topicalized conjunction phrases:

(108) [$_{conjp}$ [$_{agrop}$ **Zo**veel gegeten] [: [**dat** ze er misselijk van waren]]] hebben ze

These grammatical and ungrammatical examples in which part of the matrix clause is topicalized thus provide support for the structural analysis of result clause constructions proposed here.

In addition, the conjunction phrase in the ungrammatical examples cannot be properly licensed, because part of it is moved elsewhere. I refer section 5.10 on topicalization of the first conjunct (and stranding the second in the middle field) for discussion.

5.11 Islandhood

Result clauses, relative clauses and second conjuncts in noun phrase coordination and comparatives are islands for extraction.

Consider the examples in (109) and (110), which show that one cannot extract a phrase out of a result clause:

(109) a Piet is **zo** lang **dat** hij niet door de deur kan
Piet is so tall that he not through the door can
`Piet is so tall he can't pass through the door'

b * Waar$_i$ is Piet **zo** lang **dat** hij niet t$_i$ door kan?
where is Piet so tall that he not through can

(110) a Piet heeft **zoveel geld** verdiend **dat hij alle boeken kan kopen die hij wil hebben**
Piet has so-much money earned that he all books can buy that he wants have
`Piet earned so much money that he can buy all the books he would like to have'

b * Wat$_i$ heeft Piet **zo**veel geld verdiend **dat** hij kan t$_i$ kopen?
what has Piet so-much money earned that he can buy

As is well known, a constraint on coordination is that one cannot extract from coordinated structures either, unless the extraction is Across The Board (ATB, cf. Ross 1967):[31]

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[31] There are counterexamples to this claim. Williams (1994, p.18) observes that ATB-extraction is only forced in cases of symmetrical coordination, as in (i). In cases in which the coordinates are not (semantically) symmetric, non-ATB-extraction is possible. An example of asymmetrical coordination is given in (i) (= Williams 1994, ex.(35), p.18); the event of the first coordinate is taken to precede the activity of the second coordinate temporally. Swapping the coordinates gives rise to a different interpretation of the sentence:

(i) John went to New York and bought a painting ≠
John bought the painting and went to New York

Going to New York and buying a painting in the first sentence in (i) can be interpreted as a single event. The next example shows that one can extract from such a semantically asymmetric (but categorally symmetric) construction (= Williams 1994, ex.(36a), p.18). In that case, the single event reading features even more strongly:

(ii) What did John go to New York and buy t ?

According to Williams, extraction is limited to the second coordinate in cases like this:

(111) a Hij vertelde **een verhaal en dat hij Marie gezien had**
he told a story and that he Marie seen had
`He told a story and that he had seen Marie'
b * Wie$_i$ vertelde hij een verhaal en dat hij t$_i$ gezien had ?
who told he a story and that he seen had

(112) Wat$_i$ hoorde zij dat **Janna t$_i$ gekookt en Piet t$_i$ gegeten had ?**
what heard she that Janna cooked and Piet eaten had
`What did she hear that Janna cooked and Piet ate?'

ATB extraction is also possible with comparative clauses, cf Hendriks (1995):

(113) Wat$_i$ wist zij dat **Janna vaker t$_i$ gekookt dan t$_i$ gegeten had ?**
what knew she that Janna more-often cooked than eaten had
`What did she know that Janna cooked more often than ate?'

Extraction out of relative clauses (whether extraposed or not) is ungrammatical:

(114) a * Wat$_i$ heeft hij **de vrouw die t$_i$ wist** ontmoet?
what has he the woman that knew met
b * Wat$_i$ heeft hij **de vrouw** ontmoet **die t$_i$ wist**?

In section 5.6 we observed that coordination and comparatives differ from relative clauses and result clauses in that the syntactic environment of the first conjunct (in coordination and comparatives) must be reconstructed such that the

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(iii) * What city did John go to t and buy a painting ?

However, in Johannessen (1993, ex. (84b), p.52), an example by Lakoff (1986) of a similarly asymmetric kind is cited, in which a WH-phrase is extracted out of the first coordinate:

(iv) How many courses can you take t for credit and still remain sane?

A grammatical Dutch counterpart of (ii) is hard to find, but the Dutch version of (iv) is fine:

(v) a * Wat ben je naar New York gegaan en t tegengekomen ?
what are you to New York went and t against-come
`What did you go to New York and run into'

b Hoeveel examens kan je halen en toch gezond blijven?
how-many exams can you pass and still healthy stay
`How many exams can you pass and still remain healthy?'

It seems, then, that the ATB restriction on extraction out of coordinated clauses only holds for symmetrical cases.

grammatical function of the second associate can be determined. The availability of ATB extraction is the second difference between these two pairs of construction. I assume that these differences arise from the degree of (a)symmetry between the two conjuncts within the constructions.

ANALYSIS

Observations about the nonextractability of items out of coordinated structures dates back to Ross's Coordinate Structure Constraint (see also section 5.9 above). I do not have an account of the reasons behind such a constraint.

The next section presents a summary of the properties discussed so far. Chapter 6 will provide further evidence for the structural configuration of the conjunction phrase analysis proposed here. This evidence is based on Frisian result clauses and negative polarity items in result clauses.

5.12 Summary of properties

In the preceding subsections similarities between DP-coordination, comparatives, relative clauses and result clause constructions were discussed. The following table and list sum up the observations:

1. Result clauses usually occur sentence-finally. Relative clauses and second conjuncts in coordination and comparatives can also occur sentence-finally. The latter three are able to occur in the middle field (adjacent to their antecedent) as well;
2. A sentence-final relative clause, result clause, comparative phrase or coordinator-plus-DP can be associated with a DP (contained in the) subject, object, indirect object, or to a DP in an adverbial PP, etc. In coordination, comparative and result clause constructions linking to adverbs or predicative adjective phrases is possible as well;
3. In all four constructions, the antecedent can be embedded in, for instance, a prepositional complement. The antecedent of relative and result clauses may be rather deeply embedded, in coordination and comparative cases the degree of embedding cannot be very high, due to reconstruction requirements. One of the factors influencing the ease of linking the two associates (and, hence, the degree of embedding the first one) is how clearly they are marked off from the rest of the sentence;

4. All four constructions allow split antecedents across coordinated clauses. All of them allow coordinated antecedents as well. In addition, result clauses (and perhaps comparative clauses) allow antecedents distributed over more than one constituent in a single clause;
5. In all four constructions the antecedent may not be separated from the sentence-final part by a clause boundary, unless that clause is a complement clause;
6. In all four constructions, if there are two pairs of an antecedent and a sentence-final part, the pair with the hierarchically higher antecedent embraces the pair with the hierarchically lower antecedent;
7. In all four constructions one cannot topicalize the first associate while leaving the second associate in the middle field;
8. In none of the four constructions can the sentence-final part be topicalized, unless the antecedent is topicalized as well;
9. In all four constructions the sentence-final part is an island. (Although coordinated and comparative clauses do allow Across-the-Board extractions.)

	degree phrase + result clause	noun phrase + relative clause	coordinate construction	comparative construction
1. sentence-final occurrence of 2nd part	+	+	+	+
2. linking to various constituents	+	+	+	+
3. embedding the antecedent	+	+	+-	+-
4. allow split antecedents	+	+	+	+
5. no CP-boundary	+	+	+	+
6. nested dependencies	+	+	+	+
7. split in the middle field	-	-	-	-
8. topicalization without antecedent	-	-	-	-
9. extraction island: res.cl./ rel.cl./ 2nd coord./ comp.phr. ATB extraction	 + (-)	 + (-)	 +? +	 + +

As we have seen, the link between a sentence-final result clause and the degree head *zo* `so' it is associated with obeys the same restrictions as two coordinated or compared DPs that are separated from each other (one of which occurs in sentence-final position with the conjunction) and a DP with an associated (but separated) relative clause that occurs sentence-finally.

In light of these many similarities between the four constructions that were at issue in this section, it is desirable to analyse them in a similar fashion. The conjunction phrase analysis captures exactly that.

5.13 Conclusion

In the preceding sections a conjunction phrase analysis of result clauses was presented and supported in various ways.

In section 5.3-5.11 I presented a number of properties of result clause constructions. Noun phrase-coordination, comparatives and relative clause constructions were shown to behave just like the result clause constructions. In each section I indicated how the property at issue is accounted or allowed for in a conjunction phrase analysis.

The next chapter provides additional support for the analysis. Frisian result clauses behave exactly as predicted by the analysis with respect to the availability of the verb second (main clause) word order. Licensing of negative polarity items in result clauses by matrix clause negation also supports the claim that the result clause can be conjoined with a part of the matrix clause.

Chapter 6

Result Clauses

part III

Additional Evidence

6.1 Introduction

In the previous chapter we saw that result clause constructions, noun phrases with relative clauses, coordination and comparatives share a number of properties. These similarities indicate that these constructions share the same structural configuration. In addition, we saw that the proposed structure, a conjunction phrase, is able to account for several of the properties discussed. In some cases, the account involves conjunction at different levels, so to speak: a result clause can be conjoined with AgrSP, as in (1), or with AgrOP, as in (2):

(1) a **Zo**veel mensen hebben *Pride and Prejudice* gekocht **dat** het binnen een week uitverkocht was
so-many people have Pride and Prejudice bought that it within a week out-sold was
`So many people bought *P&P* that it was sold out within a week'

b $[_{conjp}\ [_{agrsp}$ zoveel mensen hebben P&P gekocht] [: [dat...]]]

(2) a Vestdijk heeft **zo**veel boeken geschreven **dat** ze niet op deze plank zouden passen
Vestdijk has so-many books written that they not on this shelf would fit
`Vestdijk wrote so many books that they would not fit on this shelf'

b Vestdijk heeft $[_{conjp}\ [_{agrop}$ zoveel boeken geschreven] [: [dat...]]]

c $[_{conjp}$ **Zó**veel boeken geschreven **dat** ze niet op deze plank zouden passen] heeft-ie !
so-many books written that they not on this shelf would fit has-he

Even though topicalization of a conjunction phrase provides clear support for AgrOP conjunction (cf. (2c)), it might still seem *ad hoc* to assume that in some cases a result clause is conjoined with part of a clause, while in other cases it appears to be conjoined with the entire matrix clause. However, these hypotheses are supported by additional evidence from result clauses in Frisian on the one hand, and negative polarity items in result clauses on the other hand.[1]

6.2 Frisian result clauses

This section shows how Frisian result clauses exhibit main clause or subclause properties exactly as predicted by the conjunction analysis.

6.2.1 Test for conjunction with the matrix clause

Overdiep (1932) observes that Frisian result clauses can have a main clause word order, with the finite verb (KRIGE `gets' in (3)) in second position:

(3) mar dat leit er jo **sa** dúdlik út, **dat** sa'n Frysk wiif KRIGE it op 'e simmels
but that lays he you so clearly out that such+a Frisian woman gets it on the nerves
`but he explains it to you so clearly that a Frisian woman like that gets it on her nerves' (Overdiep 1932, pp.41, 44)

He suggested that result clauses like this are structurally coordinated with the main clause, even though they are functionally subordinate. This is exactly in line with the conjunction phrase analysis proposed here.

De Haan (1990) presents Overdiep's line of reasoning, and provides additional evidence for his suggestion: De Haan shows that the result clauses with verb second word order exhibit other characteristics of main clauses as well. These are: the unavailability of a weak personal pronoun as subject, and the availability of left dislocation and of interjections (cf. subsections 6.2.1.2-4).

In the analysis of result clause constructions presented here, a result clause is conjoined with at least AgrSP if the antecedent degree head *zo* `so' is part of the

[1] Thanks to Ger de Haan for bringing the Frisian result clauses with verb second to my attention.

constituent in subject position. Let us assume that conjunction with the matrix clause provides a result clause with main clause status. If so, we can interpret the ability of a result clause to exhibit main clause properties as an indication that the result clause is indeed conjoined with the matrix clause containing its antecedent degree phrase. That is to say, whenever a result clause exhibits main clause properties, it is conjoined with the matrix clause. On the other hand, if main clause properties in a result clause yield ungrammaticality, the result clause is clearly not conjoined with the matrix clause, but will be conjoined with part of the matrix clause, or with (part of) a subclause (like a relative clause).

That is to say, we can use the availability of main clause properties in result clauses in Frisian to determine when conjunction with the matrix clause is possible. We will see that conjunction with the matrix clause is possible when the degree phrase antecedent occurs in several positions (e.g. adverbials, predicative degree phrases), not only when it occurs in structurally high ones like the subject position.

The flip side of the coin is more important: the ungrammaticality of main clause features in a result clause is conclusive evidence that a result clause is not conjoined with the matrix clause, but with part of it (or with a subclause). In those cases, topicalization of the conjunction phrase may indicate which part of the matrix clause the result clause is conjoined with.

The next four subsections briefly present the four main clause features are exhibited by Frisian result clauses.

6.2.1.1 Verb second

Frisian is a "verb second" (V2) language; the finite verb is usually the second element in a main clause, following any WH- or topicalized material or the subject. Subclauses, in contrast, find their finite verb at the end of the clause:

(4) a MAIN CLAUSES: FINITE VERB IN `SECOND' POSITION (V2):
Sa'n Frysk wiif KRIGE it op 'e simmels
such+a Frisian woman gets it on the nerves

b SUBORDINATE CLAUSES: FINITE VERB IN FINAL POSITION:
..., dat sa'n Frysk wiif it op 'e simmels KRIGE
such+a Frisian woman it on the nerves gets

Overdiep (1932) observed that result clauses can have the main clause word order:

(5) mar dat leit er jo **sa** dúdlik út, **dat** sa'n Frysk wiif KRIGE it op 'e simmels
but that lays he you so clearly out that such+a Frisian woman gets it on the nerves
`but he explains it to you so clearly that a Frisian woman like that gets it on her nerves' (Overdiep 1932, pp.41, 44)

The verb second feature is the most important indication that a result clause has main clause status. In the next three subsections it will always be the result clause with the verb second word order that also exhibits the other main clause property at issue, in contrast to a result clause with the finite verb in final position. Therefore, in the discussion of several result clause examples later on, I will take the availability of verb second as indicative of conjunction with the matrix clause.

6.2.1.2 Weak subject pronouns

Frisian has two forms for the third person singular masculin pronoun: a full and a weak version. In the first position of a main clause, the full form is obligatory, whereas in all other environments the weak version is obligatory.

The following example shows that in a result clause with verb second, the weak version of the third person singular masculin, *e* or *er*, cannot replace the full version *hy* `he' in result clauses:

(6) mar dat leit sa'n Frysk wiif jo **sa** dúdlik út, **dat** hy/*er KRIGE it op 'e simmels
but that lays such+a Frisian woman you so clearly out that he gets it on the nerves
`but a Frisian woman like that explains it to you so clearly that he gets it on his nerves'

(7) mar dat leit sa'n Frysk wiif jo **sa** dúdlik út, **dat** ?hy/er it op 'e simmels KRIGE

This supports the assumption that a result clause with verb second has main clause status and is conjoined with the matrix clause.

6.2.1.3 Left dislocation

Left dislocation is typically possible in main clauses, but not in subclauses. The next example shows that in a result clause with verb second, left dislocation (of *sa'n Frysk wiif* `such-a Frisian woman') is grammatical:

(8) mar dat leit er jo **sa** dúdlik út, **dat** sa'n Frysk wiif, dy KRIGE it op 'e simmels
but that lays he you so clearly out that such+a Frisian woman that gets it on the nerves
`but he explains it to you so clearly that a Frisian woman like that, she gets it on her nerves'

Again, the result clause seems to behave like a main clause.

6.2.1.4 Interjections

The fourth feature indicating that a result clause may have main clause status is the distribution of discourse elements like interjections. The following paradigm (De Haan 1990, ex. 35-36) shows that such discourse elements can occur in result clauses with verb second, but not in result clauses with a final finite verb (the `proper' subclauses):

(9) a mar dat leit er jo **sa** dúdlik út, **dat** sa'n Frysk wiif it op 'e simmels KRIGE
but that lays he you so clearly out that such+a Frisian woman it on the nerves gets
`but he explains it to you so clearly that a Frisian woman like that gets it on her nerves'

b * mar dat leit er jo **sa** dúdlik út, **dat**, godskes, sa'n Frysk wiif it op 'e simmels KRIGE
but that lays he you so clearly out that gosh such+a Frisian woman it on the nerves gets

(10) a mar dat leit er jo **sa** dúdlik út, **dat** sa'n Frysk wiif KRIGE it op 'e simmels
but that lays he you so clearly out that such+a Frisian woman gets it on the nerves

b mar dat leit er jo **sa** dúdlik út, **dat**, godskes, sa'n Frysk wiif KRIGE it op 'e simmels

but that lays he you so clearly out that gosh such+a Frisian woman gets it on the nerves

This discussion of main clause properties in Frisian result clauses (cf. De Haan 1990) shows that result clauses with verb second word order indeed behave like main clauses.

Zwart (1997, p.235, fn.46) notes that result clauses exhibiting verb second are an exception to the generalization that verb second (a property of root clauses) is not allowed in adjunct clauses (cf. Iatridou & Kroch 1992, citing De Haan, p.c.). Moreover, it is an exception that has not been accounted for yet: why would an adjoined clause behave like a root clause?

In my conjunction analysis of result clauses, the availability of verb second in result clause can be made sense of. I claim that result clauses with embedded verb movement are conjoined with the matrix clause, a claim that is supported throughout in the next section. Apparently, conjunction with a matrix clause provides the result clause with root properties like verb second.[2] This makes sense, because the configuration of two coordinated main clauses is identical (in the conjuncion phrase analysis proposed here) to that of a result clause conjoined with a matrix clause.

The availability of verb second in Frisian result clauses, then, provides additional conceptual support for the conjunction analysis, as well empirical support.

The next section shows that where a result clause is arguably conjoined with part of a matrix clause, verb second is ungrammatical. In examples in which a result clause may be conjoined with the matrix clause, verb second is possible.

6.3 Applying the test

So far, we have established that whenever it is possible to have verb second word order in a result clause, that clause behaves like a main clause in other respects as well. In the conjunction analysis of result clauses it is conjoined with the matrix clause.

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[2] Overdiep (1932) and De Haan (1990) suggest that *dat* `that', which is morphologically identical to a complementizer, is in fact the coordinator.

If a result clause is not conjoined with the matrix clause, it is conjoined with (part of) a subclause (e.g. a relative clause) or with part of the matrix clause (e.g. AgrOP or PredP). If it is conjoined with a subclause or part of a subclause, the conjunction phrase analysis predicts that verb second will not be grammatical, because it is not conjoined with the matrix clause. The following example shows that this prediction is borne out:[3]

(11) a * de jongen dy't **sa** meager is **dat** hy KIN wol efter in reid skûlje
the boy that so skinny is that he can PRT behind a reed shelter
`the boy, that is so skinny that he can hide behind a reed'

b de jongen dy't **sa** meager is **dat** hy wol efter in reid skûlje KIN
the boy that so skinny is that he PRT behind a reed shelter can

In (11a) we see that verb second is ungrammatical.

With respect to conjunction with lower levels of the matrix clause, e.g. PredP, we should be careful not to look at sentence-final result clauses. The reason for this is that both result clauses that are conjoined with the matrix clause and result clauses that are conjoined with part of it will occur sentence-finally. The former do allow verb second, the latter are predicted not to allow it, but since they both occur sentence-finally we do not know which one we are looking at. Therefore, we should look at an example in which matrix clause conjunction is absolutely excluded and then see if verb second is possible.

Recall that we can topicalize a conjunction phrase:

(12) a Die jongen is **zo** mager **dat** hij wel achter een rietje kan schuilen
that boy is so skinny that he PRT behind a reed can shelter
`That boy is so skinny that he could hide behind a reed'
b [$_{conjp}$ **zo** mager **dat** hij wel achter een rietje kan schuilen] is die jongen

(13) a Dy jongen is **sa** meager **dat** hy wol efter in reid skûlje kin
that boy is so skinny that he PRT behind a reed shelter can

b [$_{conjp}$ sa meager dat hy wol efter in reid skûlje kin] is dy jongen

(14) a Ik ha **sa**folle boeken kocht **dat** se net yn 'e kast passe
I have so-many books bought that they not in the bookcase fit

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[3] I'd like to thank Pytsje van der Veen for translating my data into Frisian and providing me with her judgments. I would also like to thank Ger de Haan and Rienk Withaar for their judgments.

`I bought so many books that they do not fit in the bookcase'

b [$_{conjp}$ safolle boeken kocht dat se net yn 'e kast passe] ha ik (net)
so-many books bought that they not in the bookcase fit have I not

In such examples - in which part of a clause is topicalized with the result clause - the result clause cannot possibly be conjoined with the entire matrix clause. If it were conjoined with the whole matrix clause, what is topicalized in the (b) examples would not be a constituent.

The analysis, then, predicts that verb second is ungrammatical in result clauses that are topicalized together with part of the matrix clause:

(15) a [$_{conjp}$ **Sa** meager **dat** er wol efter in reid skûlje KIN] is dy jongen
so skinny that he PRT behind a reed shelter can is that boy
`So skinny that he can hide behind a reed is that boy'

b?* [$_{conjp}$ **Sa** meager **dat** hy KIN wol efter in reid skûlje] is dy jongen[4]

(16) a [$_{conjp}$ **Sa** dúdlik **dat** sa'n Frysk wiif it op 'e simmels KRIGE] leit er dat jo út
so clearly that such+a Frisian woman it on the nerves gets lays he that you out
`So clearly that a Frisian woman like that gets it on her nerves does he explain it to you'

b * [$_{conjp}$ **Sa** dúdlik **dat** sa'n Frysk wiif KRIGE it op 'e simmels] leit er dat jo út

(17) a [$_{conjp}$ **Sa**folle boeken kocht **dat** se net yn 'e kast PASSE] ha ik (net)
so-many books bought that they not in the bookcase fit have I (not)
`So many books that they do not fit in the bookcase did I (not) buy'

b * [$_{conjp}$ **Sa**folle boeken kocht **dat** se PASSE net yn 'e kast] ha ik (net)

The examples above show that this prediction as well is neatly borne out.

In section 5.9 it was observed sentences like (18) are grammatical:

(18) Zoveel boeken heb ik gekocht, dat ze niet in de kast passen

[4] One of the informants rates this examples acceptable.

In (18) the antecedent degree phrase is topicalized. The grammaticality of this example contrasts with the ungrammaticality of topicalizing the antecedent degree phrase if the result clause does not occur sentence-finally (cf. section 5.9 of chapter 5 for discussion):

(19) * **Zo**veel boeken heb ik [$_{conjp}$ t_i [: [**dat** ze niet in de kast passen]]] gekocht

The contrast was attributed to fact that in (19) the antecedent degree phrase occurs outside of the conjunction phrase, and cannot license the conjunction phrase by adjoining to it after Spell-Out. The structure of (18), on the other hand, involves conjunction with the matrix clause, including the topicalized degree phrase:

(20) [$_{conjp}$ **Zo**veel boeken heb ik gekocht [: [**dat** ze niet in de kast passen]]]

Given the test we are applying in this section, the Frisian translation of (20) is predicted to allow the finite verb in second position. Example (21b) shows that indeed it does:

(21) a [$_{conjp}$ [**Sa**folle boeken ha ik kocht] [: [**dat** se net yn 'e kast PASSE]]]
so-many books have I bought that they not in the bookcase fit
`I bought so many books that they do not fit in the bookcase'

b [$_{conjp}$ [**Sa**folle boeken ha ik kocht] [: [**dat** se PASSE net yn 'e kast]]]

In sum, Frisian result clauses provide unequivocal support for the conjunction analysis presented in chapter 5. That is, result clauses are the second conjunct in a conjunction phrase: they can be conjoined with the matrix clause as a whole, or with part of it.

6.3.1 Conclusion

In this section we saw that the conjunction analysis yields perfect predictions about whether a result clause in Frisian will have main clause status and can have the verb second word order or not.

When result clauses in Frisian are conjoined with the matrix clause, the finite verb in the result clause need not be sentence-final: the result clause can have the

verb second word order that is associated with matrix clauses. In contrast, when the result clause is conjoined with part of the matrix clause, or with a subclause, verb second is not possible.

Zwart (1997, p.235) notes that result clauses are a well known exception to the restriction that verb second is not possible in Frisian adjunct clauses. The conjunction analysis proposed in this thesis provides an answer to this puzzle: the result clause is not an adjunct clause at all. Rather, it is conjoined with the matrix clause when verb second is allowed. Apparently, conjunction with a matrix clause provides the result clause with matrix clause properties as well. If the result clause were right-adjoined to the clause (or to part of a clause) that it is associated with, the availability of matrix clause properties in some cases, but not in other, is inexplicable. This means that the availability of verb second in Frisian result clauses when they are conjoined with the matrix clause provides conceptual motivation for the conjunction analysis as well.

6.4 Negative polarity items

In this section I will look at negative polarity items in result clauses and show how negative polarity items in result clauses can be licensed by negation in the matrix clause.

First, consider the observation that a negative polarity item is allowed when it occurs in the c-command domain of negation (e.g. Hoekstra 1991, chapter 3). A very clear negative polarity item in Dutch is the expression *ook maar* `even':

(22) a Hij heeft nooit **ook maar** één boek gelezen
he has never NPI one book read
`He never read even one book'
b# Hij heeft **ook maar** één boek nooit gelezen
he has NPI one book read

With this c-command requirement in mind, negative polarity items in result clauses that are licensed by negation in the matrix clause provide us with an extra clue about the structural position of the result clause.[5]

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[5] Some negative polarity items do not allow licensing from outside of their clause. An example is an expression like:
(i) a Hij kan er geen klap van

Recall that when the degree phrase occurs in the object constituent in [spec,AgrOP], we have a conjunction of AgrOP and the result clause. Topicalization of the conjunction phrase corroborates this:

(23) a Hij bezat **zo**veel land **dat** hij er een kasteel op kon laten bouwen
he possessed so-much land that he there a castle on could let build
`He owned so much land that he could have a castle built on it'

b [$_{conjp}$ **zo**veel land **dat** hij er een kasteel op kon laten bouwen] bezat hij nog niet
so-much land that he there a castle on could let build possessed he still not
`So much land that he could have a castle built on it, he didn't have yet'

Given that the result clause is conjoined with AgrOP, the analysis predicts that negation c-commanding the object in [spec,AgrOP] will also c-command any negative polarity items in the result clause. In other words, a negative polarity item like *ook maar* `even' in a result clause that is associated with a degree phrase in object position should be licensed by matrix clause negation that c-commands the object. This predictions is neatly borne out:

(24) Hij had nog niet [$_{conjp}$ zoveel land in bezit [: [dat-ie er **ook maar** een piepklein huisje op kon bouwen]]]
he had still not so-much land in possession that-he there NPI a tiny hous-DIM on could build
`He didn't own so much land yet that he could build even a tiny little house on it'

(25) Niemand had [$_{conjp}$ zoveel boeken gekocht [: [dat **ook maar** één winkel uitverkocht was]]]
nobody had so-many books bought that NPI one shop out-sold was
`Nobody bought so many books that any (one) shop ran out'

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he can there not-a hit of
`He is not at all able to do it'

b # Ik vind niet dat hij er een klap van kan
I find not that he there a hit of can
INTENDED MEANING: `I don't think he is at all able to do it'

Such expressions will not be licensed at all by negation in the matrix clause if they occur in a result clause: hence they do not provide any information about the structural position of the result clause with respect to the negative licensor. Therefore, I will restrict myself in the discussion to follow to *ook maar* `even', which clearly does allow licensing from outside of its own clause.

Examples in which *zo* `so' is part of a predicative degree phrase can also involve conjunction of the result clause at a low level. The prediction that negative polarity items in result clauses in those examples are licensed by negation preceding the degree phrase is borne out again:

(26) Ik heb nog nooit [$_{conjp}$ zo snel gelopen [: [dat ik **ook maar** één record gebroken heb]]]
I have still never so fast run that I NPI one record broken have
`I never ran so fast that I broke even one record'

The judgments about Frisian are roughly the same as those about the Dutch examples:

(27) a Hy hie safolle lân dat er der in kastiel op bouwe litte koe
he had so-much land that he there a castle on build let could
`He had so much land that he could have a castle built on it'

b [$_{conjp}$ **sa**folle lân [: [**dat** er der in kastiel op bouwe litte koe]]] hie er noch net
so-much land that he there a castle on build let could had he still not
`So much land that he could have a castle built on it, he didn't have yet'

c ? Hy hie noch net [$_{conjp}$ safolle lân yn besit [: [dat er der **ek mar** in lyts hûske op bouwe koe]]]
he had still not so-much land that he there NPI a tiny hous-DIM on build could
`He didn't own so much land yet that he could build even a tiny little house on it'there a castle on could let build

(28) Nimmen / net ien hie [$_{conjp}$ safolle boeken kocht [: [dat der **ek mar** ien winkel útverkocht wie]]]
nobody / not one had so-many books bought that there NPI one shop out-sold was
`Nobody bought so many books that any (one) shop ran out'

(29) ? Ik ha noch nea [$_{conj}$ sa hurd rûn [: [dat ik **ek mar** ien rekord brutsen ha]]]
I have still never so fast run that I NPI one record broken have
`I never ran so fast that I broke even one record'

With respect to English examples of this type, speakers do not as readily judge them well-formed as Dutch speakers do the Dutch examples. A straightforward explanation of the relative unclarity of the English data is that the English negative polarity item *any* allows other interpretations as wel (e.g. "free choice *any*" as in "*choose any of the books you like*"). These interpretations interfere with the negative polarity item reading. Still, the following examples were rated acceptable by all speakers of American-English that I asked:[6]

(30) a He hadn't bought [so many books that he could fill **any** book shelf with them]
b Nobody bought [so many books that **any** (one) shop ran out]
c He didn't own [so much land that he could **ever** build a house on it]
d I never ran [so fast that I broke **any** records]

In short, negative polarity items in object- and predicative degree phrase-related result clauses, provide additional support for the hypothesis that these result clauses are conjoined with part of the matrix clause.

Of course, the conjunction analysis also predicts that negative polarity items in subject-related result clauses can not be licensed by negation that is structurally lower than the subject. This prediction originates in the assumption that such result clauses are conjoined with (at least) AgrSP and that, hence, negation will not c-command the result clause or any negative polarity items in it. Again, the prediction is borne out; such examples are almost uninterpretable:

(31) * [$_{conjp}$ Zoveel mensen hadden *Star Wars* nog nooit in de bioscoop gezien [: [dat er **ook maar** één stoel vrij was]]]
so-many people had Star Wars still not in the cinema
seen that there NPI one chair free was

6 Thanks to the people at UCLA for giving their judgments.

`So many people had never seen *Star Wars* in a movie theatre, that even one chair was available'[7]

(32) * [$_{conjp}$ Safolle minsken hienen Star Wars noch <u>nea</u> yn 'e bioskoop sjoen [: [dat **ek mar** ien stoel ûnbeset wie]]]
so-many people had Star Wars still not in the cinema
seen that there NPI one chair unoccupied was
`So many people had never seen *Star Wars* in a movie theatre, that even one chair was available'

In sum, we saw in this section that negative polarity items that can be licensed across clause boundaries also support the conjunction analysis of result clauses.

6.5 Conclusion

This chapter provided unequivocal support for the conjunction analysis of result clauses that was proposed in chapter 5.

The conjunction analysis correctly predicts in which configuration result clauses in Frisian can or cannot have the verb second main clause word order. In addition, it explains why result clauses can have verb second at all, which used to be an exception to the claim that adjunct clauses do not allow verb second. Result clauses are not adjunct clauses at all. Rather, a result clause is the second conjunct in a conjunction phrase, and allows verb second when it is conjoined with a matrix clause.

In addition, the conjunction analysis correctly predicts that the negative polarity item *ook maar* `even' in Dutch (*ek mar* in Frisian) can be licensed by negation in the matrix clause.

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[7] The intended meaning is:

(i) Zoveel mensen hadden *Star Wars* nog nooit in de bioscoop gezien dat er zelfs niet één stoel vrij was/ dat alle stoelen bezet waren
so-many people had Star Wars still never in the cinema seen that there even not one chair free was/ that all chairs occupied were
`So many people had never seen *Star Wars* in a movie theatre that not even one chair was empty/ that all chairs were occupied'

Chapter 7

Summary

This dissertation consists of two parts, one on degree phrases and one on result clauses. Sentence (1) below exemplifies a result clause construction:

(1) Zij had **zo mooi** gezongen **dat het publiek er stil van was**
she has so beautifully sang that the audience there silent of was
`She had sung so beautifully that the audience was still quiet afterwards'

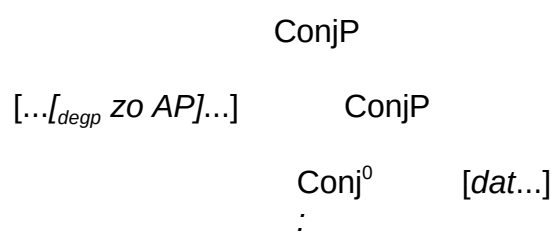
Chapters 2 considers the status of a degree phrase adverbial in linguistic theory. The question addressed there is whether degree phrase adverbials are best analyzed as adjuncts or as specifiers. Though the structural status of adjuncts and specifiers is the same in the programme I adopt (cf. Kayne 1994, Hoekstra 1991), specifiers differ from other adjoined phrases in that they have an agreement relationship with the head of the projection they are adjoined to. The presence or absence of such an agreement relationship leads to different hypotheses and conclusions. After comparing the two viewpoints, I conclude that degree phrases functioning as modifiers are best analyzed as adjuncts.

Having decided on the structural status of degree phrases that function as modifiers, I discus their internal structure in chapter 3. This discussion starts with an interesting set of data provided by Corver (1994, 1997). After presenting Corver's interpretation of these data, in which he assumes a quantifier projection in between a degree head and the adjectival projection it selects, I argue that his interpretation is partially incorrect. Corver proposes to consider *more*, *less*, *most* and *least* as heads of the quantifier phrase. The same quantifier phrase would be present in a degree phrase like *too beautiful*, where it can be spelled out as *much* in examples of *so*-pronominalization: *so much so*. However, Corver's assumptions yield a number of incorrect predictions. Instead, I show that *more*, *less*, *most* and *least* are composite forms, consisting of an adjectival quantifer like *much* or *little* and a degree head (the comparative morpheme *-er* or superlative morpheme *-st*).

This implies that *more* etc. are full degree phrases, that may adjoin to (for instance) other degree phrases or prepositional phrases (cf. Doetjes, Neeleman & Van der Koot 1998 as well). Similarly, degree heads like *so*, *too* or *as* can combine with *much* to form a full degree phrase that may adjoin to a phrase it modifies. This explains Corver's (1994, 1997) observation that these degree heads do not occur on their own in environments other than adjectival projections, whereas *more* etc. do allow for a number of other syntactic environments. Rather, *more* etc. has the same distribution as *too much* (instead of *too* by itself). Analyzing *more* as a degree phrase, just like *too much* is a degree phrase, neatly accounts for their similar distribution. I conclude that there is no quantifier projection that intervenes between a degree head and its complement, contra Corver's (1994, 1997) analysis.

Chapter 4 opens the second part of the dissertation, which concerns the analysis of the structural configuration of sentences with a result clause. In chapter 4 I present previous analyses of result clause constructions. I argue that a result clause is not generated inside the projection of the degree phrase it is associated with. Instead, I propose an analysis of result clause constructions in chapter 5 that generates the result clause in the (usually sentence-final) position that we observe. The analysis originates in the analysis (due to Jan Koster) that coordination and relative clauses show similar behaviour in several configurations. The observation that result clause constructions and comparatives also share these similarities provides firm support for the claim that these constructions all share the same structural configuration, viz. a conjunction phrase:

(21)



The conjunction phrase provides a structure that allows for a straightforward analysis of several properties that the four constructions at issue have in common. A result clause appears to be conjoined with the matrix clause or with a part of the matrix clause. That is to say, the specifier of the conjunction phrase in (2) can be the matrix clause or part of the matrix clause. The latter assumption is corroborated by topicalization data in which the conjunction phrase as a whole is topicalized.

In addition, the conjunction analysis yields predictions with respect to the availability of verb-second main clause word order in Frisian result clauses (cf. chapter 6). Note that the availability of main clause properties in Frisian result clause is not straightforward in an extraposition analysis of result clauses: the availability of root properties in result clauses was noted to be an exception among adjunct clauses by for instance Zwart (1997a). The conjunction analysis of result clause constructions provides an account of why result clauses can have verb second word order, whereas adjunct clauses cannot: result clauses are not adjuncts, but conjuncts. Whenever a result clause is conjoined with the matrix clause, it can have verb second, which is the word order of root clauses. Whenever a result clause is arguably conjoined with part of the matrix clause, or with a subordinate clause, verb second word order is ungrammatical. Apparently, conjunction with a matrix clause provides the result clause with matrix clause status. This makes sense in a conjunction analysis, because two coordinated main clauses share the same configuration as a result clause that is conjoined with the matrix clause.

In sum, the conjunction analysis of result clauses is very well supported. Additionally, the analysis obeys the constraints of Kayne's (1994) program of the antisymmetry of syntax. Therefore, it also provides support for Kayne's programme.

7.1 Conclusion

1 there is no intermediary quantifier phrase in a degree phrase like *te mooi* `too beautiful';
2 result clauses are conjoined with the matrix clause or with a part thereof.

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Aangaande graadbepalingen en graadaanduidende bijzinnen

Het onderzoek dat aan dit proefschrift ten grondslag ligt betreft graadbepalingen en graadaanduidende bijzinnen. Een voorbeeld van een graadbepaling met een bijbehorende graadaanduidende bijzin vormen de vetgedrukte zinsdelen in (1):

(1) Zij had **zo mooi** gezongen **dat de hele zaal er stil van was**

De twee vetgedrukte zinsdelen horen bij elkaar (de zin is ongrammaticaal zonder *zo*), maar hoeven niet bij elkaar te staan (dat wil zeggen, ze kunnen gescheiden zijn door bijvoorbeeld een werkwoordsvorm als *gezongen*). De relatie tussen beide zinsdelen komt uitgebreid aan de orde in het tweede deel van dit proefschrift.

In het eerste deel wordt bepaald welke structurele status het zinsdeel *zo mooi* in de theorie over de zinsstructuur heeft. De vraag die in hoofdstuk 2 aan de orde is, is of zo'n bijwoordelijke bepaling van graad (in het kort: graadbepaling) de status van een specificeerder of van een geadjungeerde constituent heeft. In structurele termen wordt er in dit proefschrift geen verschil gemaakt tussen beide opties; dit is één van de consequenties van het onderzoeksprogramma van Kayne (1994) dat ik hier aanneem (zie ook Hoekstra 1991). Specificeerders en geadjungeerde constituenten (adjuncten) verschillen daarin, dat een specificeerder een relatie onderhoudt met het hoofd van de projectie waarvan het een specificeerder is: het hoofd en de specificeerder komen in een bepaald aspect overeen. Een adjunct daarentegen onderhoudt geen relatie met het hoofd van de projectie waaraan het geadjungeerd is en staat daardoor in een losser verband met het hoofd dan een specificeerder. Door dit verschil in de relatie tot het hoofd van de projectie, heeft de keuze om een graadbepaling als specificeerder of als adjunct te zien verstrekkende gevolgen. Op grond van de discussie van die gevolgen in hoofdstuk 2 kom ik tot de conclusie dat het de voorkeur geniet om graadbepalingen als adjuncten te zien.

Hoofdstuk 3 gaat vervolgens in op de interne structuur van een graadbepaling als *zo mooi* of *mooier*. Corver (1994, 1997) beargumenteert dat het

morfeem *-er* in een comparatiefvorm als *mooier* geen graadbepalend element is, maar een quantificeerder. Een vergelijkbare quantificeerder zou zich ophouden in een graadbepaling als *zo mooi*: deze quantificeerder wordt in het Engelse *so much so* uitgespeld als *much* `veel'. In hoofdstuk 3 draag ik argumenten aan tegen deze analyse. Mijn conclusie is dat er in een graadbepaling als *zo mooi* of een comparatiefvorm als *mooier* geen quantificeerder aanwezig is.

Met hoofdstuk 4 begint het tweede deel van dit proefschrift, dat over graadaanduidende bijzinnen gaat. Zoals in het begin van deze samenvatting is opgemerkt, hoort de bijzin in (1) bij het graadaanduidende element *zo* in *zo mooi* en kan het niet zonder *zo* voorkomen. Deze afhankelijkheid van het element *zo* houdt echter niet in dat de beide zinsdelen ook naast elkaar moeten voorkomen. Hoofdstuk 4 gaat in op verschillende theorieën die er in de loop der tijd over de structurele positie van de graadaanduidende bijzin en daarmee over de afhankelijkheidsrelatie tussen *zo* en die bijzin zijn ontwikkeld. De conclusie dat de bijzin niet in de projectie van het graadaanduidende *zo* wordt gegenereerd leidt de analyse in die in hoofdstuk 5 wordt gepresenteerd.

Aan de hand van recente analyses van nevenschikking als een asymmetrische structuur die geprojecteerd wordt door het nevenschikkende element en aan de hand van voorbeelden van een viertal constructies stel ik een analyse voor van de relatie tussen graadaanduidende bijzinnen en hoofdzin waartoe zij behoren. Ik betoog dat een graadaanduidende bijzin in eenzelfde structurele verhouding staat tot (een deel van) de hoofdzin als de verhouding van het tweede element in een nevenschikkingsconstructie tot het eerste element van die constructie. Als overkoepelende term voor onder- en nevenschikking gebruik ik *conjunctie*.

In mijn analyse zijn graadaanduidenden bijzinnen geconjungeerd met een deel van de hoofdzin of met de hele hoofdzin. Deze analyse wordt van verschillende kanten ondersteund. Graadaanduidende bijzinnen in het Fries zijn daarvan een frappant voorbeeld: aan de hand van de voorgestelde analyse is precies te voorspellen wanneer een dergelijke bijzin in het Fries een woordvolgorde toestaat die normaal gesproken gereserveerd is voor hoofdzinnen en wanneer die woordvolgorde niet toegestaan is. Hoofdstuk 6 is aan deze data gewijd. In dat hoofdstuk worden tevens voorbeelden besproken van negatief polaire uitdrukkingen die in graadaanduidende bijzinnen voorkomen, maar gelicenseerd worden door een negatief element dat zich (buiten de bijzin) in de hoofdzin ophoudt. Ook deze voorbeelden ondersteunen de voorgestelde analyse.

Deze samenvatting samenvattend leidt het voorliggende proefschrift tot de volgende conclusies:

1 in een graadbepaling als *te mooi* bevindt zich geen projectie van een quantificeerder;

2 graadaanduidende bijzinnen zijn geconjungeerd met de hoofdzin of met een deel daarvan.

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